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Essays on the Choice of Organizational Form

by

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Abstract

This dissertation comprises three essays. The first essay describes the characteristics of income trusts and investigates how their diffusion affected the profile of newly listed firms in Canada. I find that firms going public as income trusts are firms that would have gone public as corporations had the income trust form not existed. Income trusts have not attracted mature firms to the market that would have otherwise remained private. I also find that in recent years a number of unprofitable firms have gone public due to a switch in emphasis for new listings from historical financial record to market capitalization as a screening mechanism.

The second essay proposes that a firm's choice of organizational form is a trade-off between the fit with its investment opportunity set and its attempt to exploit periods of favourable valuations for a given organizational form. I find that an increase in valuations for income trusts relative to public corporations increases the likelihood that a firm will go public as an income trust. I also argue that some firms choose to trade off fit in favour of market timing because this allows them to maximize the proceeds of the offering through reduced costs of going public.

The third essay investigates how the high payouts that characterize income trusts affect investment of newly listed firms. I find that high growth firms that become income trusts invest and grow by returning to the market often to raise new capital. This essay extends extant literature by showing that high payouts can be adopted not only by low-growth firms as a means to reduce overinvestment, but also by high-growth firms as a means to exploit investor sentiment.

Dedication

To my beloved family for their unconditional love and support

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Chapter 1

Introduction

A study of the emergence, choice and consequences of organizational form is central to finance. While the public corporation remains the most diffused organizational form in several industrialized economies, Jensen (1989) goes as far as to argue that it might have "outlived its usefulness" as it is prone to agency problems. Recent decades have witnessed the emergence of organizational forms alternative to the public corporation. Unlike public corporations that have lower payouts in order to reinvest and grow, these alternative organizational forms have higher payouts and lower reinvestment policies. Examples of payout-intensive organizational forms include real estate investment trusts in US, UK and Japan; master limited partnerships in the US; and income trusts in Canada.

The finance literature predicts that these alternative organizational forms should be adopted by mature firms, who are more prone to agency problems (Jensen, 1986; 1989). Some media reports, however, point to several firms adopting payout-intensive forms while going public, when they are still in the early stages of their life-cycle. This evidence offers a few opportunities for extending extant literature. The first opportunity is to investigate how the diffusion of payout-intensive organizational forms affects the profile of newly listed firms. The second opportunity is to investigate the factors affecting a firm's choice between the corporate form and these alternative organizational forms. The third opportunity is to investigate how the high payouts that characterize these alternative organizational forms affect the capital expansion path of newly listed firms.

This dissertation uses the empirical context of income trusts in Canada to investigate these research opportunities. The tax ruling approving the introduction of income trusts was passed by the government in 1986. The first instance where a firm went public with this organizational form occurred in 1995. The next few years were characterized by a fairly rapid diffusion of income trusts until 2006, when a provision was approved prescribing the gradual elimination of tax incentives for income trusts. It was speculated that these incentives were withdrawn due to announcements made by large firms such as Telus and Bell Canada Enterprises (BCE Inc.) of their intention to become income trusts.

The first essay of this dissertation describes the characteristics of income trusts and investigates how the fact that income trusts have become over time the primary choice for firms going public in Canada has affected the characteristics of newly listed firms. More specifically, if firms choosing to go public as income trusts are primarily mature and profitable firms, which Jensen's (1986; 1989) framework predicts as most suitable for payout-intensive organizational forms, one would expect that firms going public in Canada have become more mature and profitable as a result of the diffusion of income trusts. By contrast, if some relatively young and unprofitable firms choose to go public as income trusts rather than corporations, one would expect that firms going public in Canada have become smaller and less profitable over time as documented by Fama and French

(2003; 2004) for US. One factor that might cause young and less profitable firms to go public as income trusts is market timing, namely their attempt to take advantage of the high valuations of income trusts to lower their cost of equity capital. The notion of market timing refers to firms making choices that aim "to exploit temporal fluctuations in the cost of equity relative to the cost of other forms of capital" (Baker and Wurgler, 2002). This essay reveals that the existence of the income trust form has not attracted a new group of firms to the capital markets, but rather, induced some firms that would have gone public as corporations to go public as an income trust. I also find evidence that in recent years a number of unprofitable firms have accessed the Canadian capital market. This phenomenon appears to have taken place due to a switch in emphasis for new listings from historical financial record to market capitalization as a screening mechanism that likely constituted an adjustment to firms in the new economy.

The second essay of this dissertation proposes that a firm's choice of organizational form is a trade-off between the fit with its investment opportunity set and its attempt to exploit periods of favourable market valuations for a given organizational form. While previous studies on the choice of organizational form solely focus on internal characteristics (Ciccotello and Muscarella, 1997), an emerging body of literature is now proposing that external factors such as stock market returns (Baker and Wurgler, 2000) and market valuations (Baker and Wurgler, 2004; Pagano, Panetta and Zingales, 1998) also affect firm choices. I test two complementary hypotheses for the choice of going public as an income trust rather than as a public corporation. First, consistent with free cash flow theory (Jensen, 1986), I argue that internal characteristics drive this choice. Hence, mature and profitable firms are more likely to choose the income trust form. Second, building on the market timing literature (Baker and Wurgler, 2002; 2004), I propose that this choice is driven also by external factors. Periods of high valuations of income trusts relative to corporations should increase the likelihood of firms choosing the income trust form. Consistent with free cash flow theory, firms going public as income trusts are generally older and more profitable. Consistent with the market timing literature, an increase in valuations for income trusts relative to public corporations increases the likelihood that a firm will go public as an income trust. I argue that some firms choose to trade off fit in favour of market timing because it allows them to maximize the proceeds of their initial public offering through reduced costs of going public.

The third essay investigates how the high payouts that characterize income trusts impact investment and operating performance of newly listed firms. The question goes to the very essence of the relationship between payout policy and investment of high growth firms. On the one hand, studies by Bhattacharya (1979) and Easterbrook (1984) argue that high growth firms might have high payouts and invest if they return to the market often to raise new capital. On the other hand, the free cash flow theory (Jensen, 1986) argues that high payouts should be adopted by firms with low growth opportunities to prevent managers from investing in value destroying projects. This raises the question of whether, in case of a mismatch between a firm's payout policy and its growth opportunities, investment is driven by payout policy or by growth opportunities.

I find support for the former set of studies and show that high growth firms that become income trusts invest and grow by engaging in acquisitions, which they finance by returning to the capital markets. This essay extends the free cash flow theory by showing that high payouts can be adopted not only by low-growth firms as a means to reduce overinvestment induced by agency conflicts (Jensen, 1986), but also by high-growth firms as a means to exploit investor sentiment while going public, as long as they can return to the capital markets. The essay has potentially important policy implications. The evidence that many income trusts grow by acquiring other firms in their industry suggests that they might have allocated resources to more efficient users within an industry. Hence, income trusts might not have been as detrimental to the Canadian economy as proposed by their detractors. This finding is particularly relevant in light of the current debate regarding whether and how the regulation introduced in 2006 to reduce the diffusion of income trusts should be modified before their phase-out in 2011.

As an overall summary, the three essays of this dissertation make important contributions to the free cash flow theory, and to the market timing, and IPO literatures. The key contributions of this dissertation are the explicit focus on external determinants of the choice of organizational form and their consequences on a firm's investment and operating performance.

The remaining chapters of this dissertation are structured as follows. Chapter 2 provides an overview on income trusts and examines their impact on the characteristics of newly listed firms in Canada. Chapter 3 presents the choice of going public as an income trust or as a public corporation as a trade-off between fit with a firm's investment opportunity set and external market valuations. Chapter 4 describes the impact of the high payouts that characterize income trusts on a firm's investment and operating performance. Chapter 5 presents a brief summary of results and concludes this dissertation.

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Chapter 2

Income Trusts and their Impact on the Canadian Capital Markets

2.1 Introduction

Studies on US public listings argue that smaller and less profitable firms have been going public in recent years (Fama and French, 2003; 2004). This phenomenon has been attributed to concessions made by stock exchanges in their listing requirements. While firms in the US go public predominantly as corporations (Fama and Jensen, 1983), in Canada an organizational form alternative to the corporation which emerged in 1986 – the income trust –has become over time the primary choice for firms going public.

The income trust is an example of a payout-intensive organizational form alternative to the corporation. Previous studies have argued that payout intensive organizational forms are more suitable for mature firms (Jensen, 1986; 1989), because of their ability to reduce the agency costs arising from their high profitability combined with few investment opportunities. As increases in managerial pay are often more strongly related to increases in firm size rather than firm value (Jensen, 1989), managers have an incentive to retain cash to increase firm size rather than paying out cash to the shareholders even if this entails undertaking value destroying projects. This phenomenon has been referred to as *overinvestment* in Jensen's (1986) framework.

Some previous studies report that the link between managerial pay and firm size reflects the argument, put forward by several theories of managerial production, that managerial pay should reflect "the quantity of resources controlled by the individual executive and the scope of managerial responsibilities" (Murphy, 1985). The high distributions that characterize payout-intensive alternative organizational forms increase the value of mature firms by reducing the amount of cash available to managers to overinvest.

In light of the suitability of high payouts to mature firms, the diffusion of the income trust form among firms going public raises an interesting issue. On the one hand, the existence of income trusts could have drawn to the market mature firms which would have otherwise remained private. In this case, one would predict that newly listed firms in Canada have become older and more profitable over time. On the other hand, some of the firms that go public as income trusts could be young and less profitable firms that choose to go public as income trusts rather than corporations. In this case, one could expect newly listed firms in Canada to follow a trend similar to that displayed by listed firms in US (Fama and French, 2003; 2004), becoming smaller and less profitable over time. One such factor that might have caused young and less profitable firms to go public as income trusts is market timing, namely their attempt to take advantage of the high valuations for income trusts in the market to lower their cost of equity capital.

In this essay, I address the above issue by comparing age, size and profitability of newly listed firms over the two sub-periods 1971-1994 and 1995-

2005. The year 1995 is chosen to identify the two sub-periods as it is the first year when firms go public as income trusts. I contrast the prediction that after 1995 the characteristics of newly listed firms shift towards those of mature and profitable firms with the alternative prediction that newly listed firms in recent years are younger and relatively less profitable.

I find that in recent years a number of unprofitable firms have listed on the Canadian market due to a shift in emphasis for new listings from historical financial performance to market capitalization occurred in 1998, likely as an adjustment to firms in the new economy. I fail to find any support for the alternative hypothesis that the existence of the income trust form has drawn to the capital markets mature and profitable firms that would have otherwise remained private. It appears that the income trust form did not attract a new group of firms to the capital markets; rather, it attracted firms that prior to 1995 would have gone public as corporations to go public as an income trust.

This study makes a few contributions to the finance literature. First, it contributes to the literature on initial public offerings by showing that the existence of a new organizational form does not draw to the capital markets firms that would have otherwise remained private. Rather, it leads firms meaning to go public to choose between doing so with the new form or with the corporate form.

Second, it contributes to the understanding of the evolution of stock markets by providing further evidence that the less profitable among newly listed firms have become even less profitable in recent years. Thus, the evidence found by Fama and French (2003; 2004) for US holds true in Canada also. This finding has potentially important policy implications as it suggests that relaxing the requirements for listing on the capital market might generate short-term gains for stock exchanges, but might facilitate the entrance of weak firms on the market.

The remaining sections of this essay are organized as follows. Section 2.2 provides an overview on income trusts and compares their characteristics to those of public corporations. Section 2.3 illustrates the sampling criteria used in this study and presents descriptive statistics. Section 2.4 presents the analysis of the characteristics of newly listed firms in Canada between 1971 and 2005. Section 2.5 examines the effect of the diffusion of income trusts on the characteristics of newly listed firms. Section 2.6 concludes this essay.

2.2 Income Trusts

Although most large organizations around the world are corporations (Fama and Jensen, 1983; Shleifer and Vishny, 1997), recent decades have witnessed the emergence, diffusion and on occasion disappearance of alternatives to the corporation. These alternatives have been introduced into economies as they are characterized by a superior ability to increase firm value. One such example is the emergence and diffusion of income trusts in Canada.

Income trusts are publicly traded investment vehicles that interpose a trust between an operating entity and the investors. A simplified version of the income trust form is presented in Figure 2.1, Panel A. In the early years, the operating entity is generally a limited liability corporation. The trust purchases all the debt and equity of the operating entity using the proceeds of the IPO. Thus, the trust unit holders, trough ownership of the trust units, are both shareholders and debt-holders of the operating entity (Halpern and Norli, 2006). The amount of debt owned by the trust, generally unsecured and subordinated, is typically greater than the amount of equity and serves the purpose to eliminate any corporate income tax for the operating entity through interest deductibility. Halpern and Norli (2006) observe that "the internal debt and interest rates are deliberately set at levels designated to achieve this outcome." The income trust, in turn, escapes taxation by distributing all the earnings received by the operating entity to the trust unit holders, qualifying this way as tax-flow through entity. One important difference between this type of income trust and the master limited partnership (MLP), an organizational form diffused in the US in the eighties is that, while the MLP is a tax-exempt entity, the income trust is not tax-exempt entity. If the income trust fails to distribute all the earnings received by the operating entity to the unit-holders, the undistributed portion will be taxed at the highest personal tax rate.

To avoid this possibility, income trusts recently started being structured using a limited partnership as the operating entity rather than a corporation. The modified version of the income trust form is presented in Figure 1, Panel B. The income trust uses the proceeds of the IPO to acquire units in a limited partnership which will carry on the business. As the limited partnership is a tax-exempt entity, this income trust form does not need to use internal debt to achieve tax-flow through status (Halpern and Norli, 2006). This second type of income trust form is very similar to the MLP that became diffused in US in the eighties.

The characteristics of the income trust form motivate why income trusts have been defined as vehicles that distribute the earnings of an operating entity to the investors in a tax efficient manner (King, 2003). This definition summarizes two broad characteristics of income trusts. First, income trusts have the incentive to distribute all available earnings to the trust unit holders, particularly those income trusts where the operating entity is structured as a corporation. And second, as long as income trusts distribute all available earnings to the investors, they classify as flow-through entities for tax purposes (until 2011).

While the provision enabling the income trust form in Canada dates back to December 1985, when the government allowed the creation of Enerplus Resources Fund, it was only in 1995 that firms started going public as income trusts[1]. The first two firms to go public as income trusts were Canadian Oil and Sand Trust, and Labrador Iron Ore Royalty Income Fund in October 1995. Until then, a few firms had adopted the income trust form through a conversion from the corporate form.

---

[1] The market capitalization of income trusts grew from $2 billion in 1994 to $45 billion in 2002 and then to $160 billion in 2006.

After a large number of income trust listings in 1996 and 1997, very few trusts went public during the period 1998-2001, "when investor interest seemed concentrated in high-growth stocks" (Halpern and Norli, 2006). Since then, however, income trusts newly listings have increased significantly. In 2005, income trust IPOs accounted for 39% of equity capital raised in Canada and for 31% of the IPO proceeds[2]. This trend continued until the fall of 2006, when a number of large Canadian firms including Telus and Bell Canada Enterprises (BCE Inc.) announced their intention to convert to income trusts, likely driven by possible tax advantages.

The prospect of losing large amounts of tax revenues led the government to pass a provision aimed at curtailing the number of income trusts. On October 31st, 2006 the Finance minister announced the removal of the tax advance rulings on new income trusts and the extension of the validity of tax rulings for existing trusts until 2011. The Canadian government proposal to counteract the diffusion of income trusts was similar to the one passed by the US government in the late eighties to counteract the diffusion of MLPs in that both exempted REITs from the regulation. However, it was more restrictive of its US counterpart in that while MLPs operating in the natural resource sector were exempted, income trusts operating in the natural resource sector were not exempted. This decision to remove the tax advance rulings on income trusts was seen by some as the beginning of the end of income trusts in Canada[3].

---

[2] Source: TSX web site.

Income trusts can be formed in a number of ways. An *'income trust IPO'* is a transaction whereby a private entity goes public by means of an initial public offering of income trust units, or sells off one or more divisions in an initial public offering of units. A public entity may also transfer a subset of its assets to a newly formed income trust, which then goes public in an initial public offering of units. This transaction is referred to as an *'income trust carve-out'* due to its similarity with the equity carve-outs examined by Schipper and Smith (1986) in which a public corporation divests one or more divisions in an initial public offering of common shares.

A public entity may also transfer all its assets to an income trust, a transaction defined as an *'income trust conversion.'* The shareholders of the entity pre-conversion are given units in proportion to the number of shares they held in the entity pre-conversion. These transactions are akin to the conversions from public corporation to master limited partnership (MLP) studied by Ciccotello and Muscarella (1998). In the case where a public entity transfers only a subset of its assets to an income trust, the transaction is defined as an *'income trust spin-off.'* Similar to the case of income trust conversions, existing shareholders of the parent entity receive units in proportion to their holdings pre spin-off. Income trust spin-offs are similar to the corporate spin-offs examined by Hite and Owers (1983) and Shipper and Smith (1983). This essay focuses on income trusts formed by initial public offering of a previously private entity. It does not consider income trusts conversions, carve-outs and spin-offs.

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[3] This essay specifically focuses on the period prior to 2006.

2.2.1 The Design of Income Trust Units

This section compares income trust units and other traded securities such as common shares, corporate bonds, preferred shares and closed-end fund units in terms of periodic payments, initial underpricing, risk and return and liquidity. Such a comparison is relevant as the characteristics of these classes of securities "distinguish organizations from one another and help explain the survival of organizational forms in specific activities" (Fama and French, 1983).

Periodic payments. Although income trusts have been sometimes referred to as an alternative to corporate bonds due to the high levels of their distributions, investors' right to distributions is different for income trust units and corporate bonds. For income trust units, similar to common shares and preferred shares, distributions can be reduced or suspended without consequences from the investors. By contrast, in the case of corporate bonds, bondholders' right to receive periodic interest payments can be legally enforced and in extreme cases can lead to the bankruptcy of the firm.

Initial Underpricing and Long-term Performance. There is large body of evidence showing that common stocks are underpriced on the first day of trading (Ibbotson, Sindelar and Ritter, 1988; 1994). Among the hypotheses proposed to explain initial underpricing, the information asymmetry hypothesis (Beatty and Ritter, 1986) has received the largest empirical support (Ljungqvist, 2005). This hypothesis argues that higher information asymmetry on the value of the shares in the aftermarket translates into higher initial underpricing. After the initial public offering (IPO), firms exhibit significantly lower stock performance than comparable non-IPO firms. One possible explanation is that as firms go public at the peak of their operating performance, the market initially overweighs the recent trend in performance and overprices the shares on the first day of trading and then corrects the initial misvaluation after the IPO (Loughran and Ritter, 1995).

In the case of corporate bonds, Datta, Datta and Patel (1997) show that low risk investment grade bonds are generally overpriced, while risky junk bonds are underpriced. They deem their evidence consistent with the information asymmetry hypothesis. The evidence for preferred shares and closed-end funds is similar to that of corporate bonds. For preferred shares Loderer, Sheehan and Kadlec (1991) document no initial underpricing and no post-issue underperformance. A possible explanation is that as firms have other classes of securities outstanding, the information asymmetry among the parts involved in the offering is lower and this lowers the extent of underpricing. For closed-end funds Peavy (1990) documents no initial underpricing and negative post-IPO abnormal returns. A possible reason is that a closed-end fund is "not in operation and has no assets in place before the shares are sold" at the IPO (Booth, 2004). Also, closed-end fund units are marketed mainly to individual investors (Booth, 2004). Both factors predict that the information asymmetry will be lower. Jog and Wang (2004) and Halpern (2005) find that initial underpricing for income trust units is positive and significant, although its magnitude is small.

Return, Risk and Liquidity. A study by Kryzanowski, Lazrak and Rakita (2006) examines return, risk and liquidity of income trusts over the period 2002-2004. Their study reveals that the average (median) income trust yields an annualized return equal to 25.83% (29.19%) and has a beta of 0.22 (0.28). An equally weighted portfolio of income trusts yields an annualized return higher than the stock market index and both corporate and government long term bonds (29.97% vs. 8.97%, 10.97% and 9.55%). Also, it is characterized by the second highest beta (0.28), after the beta of the stock market index (1.00). The effective spread, which measures the cost incurred by investors when trading in trusts units, varies depending on the underlying business of the trust but is generally higher than the corresponding figure for a sample of the five largest stocks in the stock market index. It is instead comparable to the average effective spread for stocks of smaller-sized firms in the index (Kryzanowski, Lazrak and Rakita, 2006).

Overall, the analysis of unit holders' right to periodic distributions, of the initial underpricing experienced by income trusts on the first day of trading, and of the risk, return and liquidity of income trust units supports the position of King (2003) and Halpern (2005) who consider trust units as equity interests.

2.2.2 The Choice of Organizational Form: Income Trusts vs. Public Corporations

In this section, I use the definition of the firm as a "nexus of contracts" proposed by Jensen and Meckling (1976) to examine how income trusts and public corporations define the contracting relationship among entities in the nexus. The first set of contracts examined is the one between shareholders and bondholders; the second is the set of contracts between shareholders and managers. I compare "the differing costs of controlling incentive conflicts" (Mayers and Smith, 1986) between shareholders and bondholders and between shareholders and managers, and suggest that different organizational forms can be identified according to how they operate to reduce the costs associated with these conflicts.

Shareholders – Bondholders Conflict. Bondholders lend capital to a corporation in exchange for the promise to receive periodic payments of pre-determined amount from the assets of the firm. After the bonds are issued, however, existing shareholders of corporations might have the incentive to take actions to increase the value of their shares at the expense of bondholders.

Shareholders have incentive to forgo positive net present value investment opportunities in the presence of outstanding bonds if the largest part of the value added to the firm by undertaking the project accrues to the bondholders. Thus, the presence of risky debt outstanding might lead to agency problems in form of underinvestment (Myers, 1977). Also, if the debt is priced assuming that the firm will maintain its existing payout policy, unanticipated increases of dividends financed by reducing investment or by liquidating assets will reduce the value of bondholders' claims. A similar effect is created if the debt is priced under the assumption that no further debt will be issued and the firm takes on additional debt of same or higher seniority. Lastly, as the equity in a levered firm has been shown to be equivalent to a European call option on the assets of the firm with a strike price equal to the face value of the debt (Black and Scholes, 1973), shareholders have an incentive to substitute high-risk assets for low-risk assets in order to increase the value of the equity (Smith and Warner, 1979). This increase in risk profile of the firm in turn reduces the value of the bondholders' claim.

Bondholders are cognizant that, after the debt is issued, shareholders have incentives to take actions to increase the value of their claims in the firm so they discount the price of the bonds to account for potential agency costs. Shareholders have the incentive to seek ways to reduce the agency costs associated to this conflict. One such way to reduce the costs associated with the conflict between shareholders and bondholders is adopting the organizational form of an income trust. As income trusts hold all the debt and the equity of the operating entity, the unit holders are simultaneously bondholders and shareholders of the trust. Thus, one of the major benefits of the income trust form is that it reduces agency costs associated with the conflict between shareholders and bondholders. However, the conflict between shareholders and bondholders can still take place in the context of the income trust form if the firm takes on third party debt, such as bank debt.

The rights of income trust unit holders, however, are not equivalent to the sum of the rights of shareholders and bondholders. For example, unit holders of income trusts, like shareholders of corporations, can react to a reduction or omission of distributions by selling their interest in the firm, thereby causing a reduction in its market value (Lang and Litzenberger, 1989). By contrast, bondholders can react to the omission of interest payments by forcing the firm into bankruptcy (Black and Cox, 1976). In this respect, income trusts are similar to financial mutuals, whose policyholders are at the same time bondholders and shareholders but do not hold rights equal to the sum of shareholders' and bondholders' rights (Mayers and Smith, 1986).

Shareholders – Managers Conflict. Several scholars, since Berle and Means (1932) and Jensen and Meckling (1976), have expressed concern for the consequences of the separation of ownership and control of corporations. Corporate managers, who "initiate and implement important decisions…do not bear a major share of the wealth effects of their decisions" (Fama and Jensen, 1983), which are instead borne by the shareholders. Thus, managers have incentives to take decisions in the pursuit of their own objectives, which are not necessarily value-maximizing for shareholders. An example in point is managers' preference for running large firms, as their remuneration is linked to the size of the firm (Murphy, 1985), which might lead them to retain the cash remaining after funding all positive net present value projects ('free cash flow') within the firm rather than returning it to the shareholders even if to do so entails funding negative net present value projects. This agency problem is referred to as overinvestment (Jensen, 1986).

One way to control overinvestment is motivating managers to pay out the free cash flow in the form of dividends (Easterbrook, 1984; Jensen, 1986) such as in the case of income trusts. The high payouts that characterize income trusts reduce the amount of resources under managerial control and reduce the potential for overinvestment. Another way to reduce overinvestment is by increasing the amount of leverage, such as in a leveraged buyout (Jensen, 1986; 1989). A leveraged buyout is a transaction whereby a public entity is taken private using a large amount of debt (Kaplan, 1990). The dividend payments characterizing income trusts, similar to the interest payments characterizing leveraged buyouts, constrain managerial discretion over internal funds, thereby reducing overinvestment (Halpern and Norli, 2006).[4]

Beside the evident advantages in reducing overinvestment, income trusts present also potential disadvantages in that several aspects of the contractual relationship between shareholders and managers of income trusts are unclear. One such aspect concerns the role and prerogatives of the Board of Directors. Income trusts replace the Board of Directors, which in the context of the corporate form has "ultimate control over internal agents – including the right to hire, fire and set the compensation of top level managers" (Fama and Jensen, 1983), with a Board of Trustees. The Trustees are generally the promoters and organizers of the income trust and are often the managers of the underlying operating entity.

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[4] In contrast to leveraged buyouts, however, income trusts do not entail an increase of bankruptcy costs. This is because during times of financial distress payouts can be reduced or even temporarily suspended as unit holders have a vested interest in avoiding default (Halpern and Norli, 2006). Thus, while in the case of income trusts the shareholder-bondholder conflict is eliminated, it is still present in the case of leveraged buyouts.

While the members of the Board of Directors cannot be appointed without the approval of the shareholders (Fama and Jensen, 1983), the members of the Board of Trustees can be appointed without the approval of the unit holders. Moreover, there is no legislation in Canada that requires the Trustees of an income trust to be independent (Erlichman, 2002). By contrast, corporate Boards include independent or 'outside' members, often representing the majority of the seats, who act as monitors of internal managers and as arbiters in case of disagreement between internal management and shareholders (Fama and Jensen, 1983).

In a corporation, the threat of shareholder litigation is a significant factor in aligning managers' incentives and shareholders objectives (Romano, 1991). This governance mechanism, however, is not available to unit holders of income trusts who are not recognized as having the right to bring derivative action against the Trustees (Gillen, 2003) or the right to dissent in case of major events involving the trust, also known as appraisal right[5]. The lack of litigation rights and the reduced efficiency of the Board as an internal control mechanism appear as opportunity costs of the income trust form. These costs are counterbalanced by the reduction in overinvestment. For this reason, the income trust form appears to be particularly efficient for mature firms, where the potential for overinvestment is higher.

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[5] Derivative actions are brought by shareholders on behalf of the corporation against those managers who breach the code of loyalty, which requires managers to put the interests of shareholders ahead of their personal interest. Corporations also provide shareholders with appraisal rights in case of "fundamental corporate events" (Bebchuk, 1994). In case an event triggers the appraisal rights,

2.3 Sample and Data

In order to examine the effect of the diffusion of the income trust form among newly listed firms, I obtain data on initial public offerings completed in Canada between 1971 and 2005. As the aim of this essay is to examine the effect of income trusts on the Canadian equity market, only offerings of "common shares" or "ordinary shares" or "trust units" are included in the sample. The inclusion of common shares and ordinary shares has a connotation similar to Fama and French's (2004) inclusion of securities identified by the Center for Research in Security Prices (CRSP) with security code 10 or 11[6].

For the period 1971-1984, data on initial public offerings is not available in electronic format. Therefore, I hand-collected the name of the issuing firm, the date of the offer, and the type of security being offered from the *Financial Post* "Record of New Issues" manuals. For the period 1985-2005, I obtained information on the name of the issuing firm, date of the offer and type of security being offered from

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shareholders have the option of redeeming their shares for the estimated value they would have had in the absence of the transaction.

[6] The first digit of the CRSP security code identifies the type of security, while the second digit provides more detailed information on the security. In this case, security code 10 and 11 identify ordinary common shares whose characteristics need not be/ have not been further specified.

SDC Platinum. Data for the period 1993-2005 is then checked with the *Financial Post* New Issue Database for consistency.

I am able to locate 305 initial public offerings with an issue price of at least $1 in the period 1971-1984 from the Financial Post "Record of New Issues" manuals. This screening criterion is consistent with some previous studies on initial public offerings (e.g.; Ritter, 1991). This price cut-off is imposed to avoid including in the sample firms that went public without having a business activity in place and that, due to the fact that the proceeds of the offer were capped, often have offer prices worth pennies. In 1986, the Junior Capital Pool Program was launched which in the next two decades took a large number of these shell companies to the market (Carpentier and Suret, 2006)[7].

For the period 1985-2005, I am able to locate 1,244 initial public offerings where the securities issued are 'common shares', 'ordinary shares' or 'trust units' and the issue price is at least $1. After eliminating all closed-end fund IPOs, I am left with 1,227 offerings in the period 1985-2005. The initial sample of IPOs comprises 1,532 offerings between 1971 and 2005. Next, I eliminate 93 offerings in the period 1985-2005, which SDC Platinum reports as 'common shares' or 'ordinary shares' offers but which are instead reported as 'unit' offers by the

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[7] Carpentier and Suret (2006) describe the Capital Pool program as a two-stage process. The first stage involves the completion of the IPO and the listing of the Capital Pool Corporation on the Exchange. The Capital Pool Corporation "is a listed corporation with no business plan, no operating history and no assets except cash, and is solely intended to find and acquire assets or companies as takeover targets." The second stage involves an agreement for a qualifying transaction whereby the firm "acquires significant assets, other than cash, by way of purchase, amalgamation, merger or arrangement with another company." Once the transaction is completed, the new entity must satisfy the minimum listing requirements for the particular industry sector, in order to be listed for trading.

Record of New Issues or by the *Financial Post* New Issue Database, and 98 offerings, mistakenly identified as initial public offerings, but which are rather follow-up financings. Finally, I exclude 44 offerings in the period 1985-2005 because they are mistakenly reported multiple times. This leaves 1,297 initial public offerings between 1971 and 2005.

I am able to locate information on the age of the firm at the offering, book value of assets, and earnings from operations for 660 firms out of the 1,297 newly listed firms. A firm is excluded from the final sample if no information is available on its age, assets or earnings from operations. Most of the firms for which I am unable to find information go public in the eighties. This is because the *Financial Post* "Record of New Issues" manuals stop reporting accounting information for firms going public in the late seventies and SDC and *Financial Post* New Issue data base exhibit some coverage of Canadian IPOs only from the early nineties. In some cases, however, I was able to collect information from the *Financial Post* "Survey of Mines and Energy" and "Survey of Industrials" manuals, which cover a selected number of firms every year.

The distribution of newly listed firms by year is shown in the first column of Table 2.1. The lowest number of new lists occurs in the decade 1971-1979 with 48 IPOs (7.3% of the total number of IPOs), while the highest number of new lists occurs in the decade 1990-1999 with 280 IPOs (42.4% of the total number of IPOs), followed by 2000-2005 with 31.4% and by 1980-1989 with 18.9%. The evidence that 125 initial public offerings were completed in the period 1980-1989 compares well with the 128 offerings documented by Jog and McConomy (2003) for the same period. I also divide the sample period in two sub-periods: 1971-1994 and 1995-2005 as 1995 is the first year when firms go public as income trusts. The number of initial public offerings is higher in the 11-year sub-period 1995-2005 than in the preceding 24-year sub-period 1971-1994: 378 vs. 282.

The second column of Table 2.1 shows the distribution of firms that go public as corporations. While 90% of the firms going public in the period 1990-1999 choose to become public corporations, this percentage declines to 49.3% in the period 2000-2005. This result indicates that in the last years of the sample period a number of newly listed firms choose to go public as income trusts rather than as corporations. In the period 1995-2005, firms going public as corporations represent 64.8% of all newly listed firms vs. 100% in the period 1971-1994. The distribution of firms going public as income trusts is presented in the third column of Table 2.1. While in the first two decades of the sample period there are no firms going public as income trusts, their number increases to 28 in the period 1990-1999 (10% of the IPOs completed in the period) and peaks at 105 in the period 2000-2005 (50.7% of the IPOs completed in the period). Figure 2.2 shows the number of firms going public as corporations and as income trusts between 1971 and 2005. The number of firms going public as corporations spikes in 1972, 1986, 1993, 1997, 2000 and 2005 with 23, 48, 72, 44, 32 and 30 offerings respectively. The number of public corporation IPOs is low in the period 1975-1984, in 1989-1992 and more recently in the period 2002-2004. Firms start going public as income trusts from 1995. Initially, firms did not adopt the income trust form while going public, but rather they converted from the corporate form to the income trust form.

The percentage of newly listed firms going public as corporations and as income trusts is shown in Figure 2.3. The percentage of firms going public as corporations drops from 100% to 70% in 1997 after which it rises again in the period 1998-2000, most likely due to the technology bubble during which a large number of firms went public to take advantage of high valuations (Ritter and Welch, 2002; Lowry, 2003). The trend reverses in the last years of the sample period, when the percentage of firms going public as income trusts is higher than the percentage of firms going public as corporations. With the exception of 2004, every year after 2001 sees a higher percentage of firms going public as income trusts than as corporations.

Panel A of Table 2.2 presents the industry classification used in this essay, while Panel B of Table 2.2 presents the distribution of IPOs by industry and year. The majority of firms going public as corporations over the sample period belong to the Manufacturing industry (SIC 20-39) with 189 out of 520 offerings, corresponding to 36.3% of the offerings completed in the period 1971-2005, followed by the Mining and Energy Industry (SIC 01-14) with 23.6%. The lowest number of public corporation IPOs occurs in the Wholesale industry (SIC 50-51) with 3.5% of the offerings, followed by the Retail trade industry (SIC 52-59) with 3.8% and by the Transportation and Communication industry (SIC 40-49) with 6.1%. With the exception of the Wholesale industry, where the number of offerings remains relatively stable, the number of firms going public in several industries increases in the early years of the sample period, peaking between 1990 and 1999, and then declines in the later years of the sample period.

The Manufacturing industry accounts for 25.5% of the initial public offerings completed by income trusts in the sample period, followed by the Transportation and Communication industry with 19.5%. This result is likely due to the fact that this industry classification attributes firms operating in the pipeline business to this industry group. Pipelines are an example of a passive business which is suitable for payout-intensive forms such as income trusts. The lowest number of income trust IPOs is documented in the Wholesale industry with 4.5%, followed by the Mining and Energy industry with 9.8%. The number of firms going public as income trusts is stable over time in the Mining and Energy industry and in the Transportation and Communication industry, while it increases in the Manufacturing, Wholesale, Retail Trade and Services industries.

I also compare the number of firms going public as corporations and income trusts within each industry in the period 1971-1994 and in the period 1995-2005. The number of firms going public as corporations in the two sub-periods remains stable for the Mining and Energy, Transportation and Communication, and Real estate industries, while it declines in the Manufacturing, Wholesale, Retail trade and Services industries. These industries are also the ones that experience the most dramatic increase in the number of firms going public as income trusts. This evidence appears broadly supportive of the claim that in the later years of the sample period the income trust form has become an alternative to the public corporation form for firms deciding to go public.

2.4. Characteristics of Newly Listed Firms in Canada between 1971 and 2005

In the remainder of the essay, I examine the effect of the existence of income trusts in Canada on the characteristics of newly listed firms. Table 2.3 shows age, size and profitability of newly listed firms in various sub-periods between 1971 and 2005. All dollar figures are adjusted to account for inflation. The age of a newly listed firm is measured by the number of years between the start of operations and the initial public offering. The size of the firm is measured by the book value of its total assets at the fiscal year-end prior to the offering. The profitability of a firm is measured by its earnings before interest and taxes deflated by total assets.

The age of newly listed firms remains stable over time. In the period 1971-1979, the average (median) firm goes public at 11.5 years (5 years); in 1980-1989 at 9.2 years (5 years); while in 1990-1999 and 2000-2005, the average age is between 10 and 12 years and the median is 6 years. The median age of newly listed firms in Canada is comparable to the median of 7 years documented in the period 1980-2000 by Loughran and Ritter (2003) and in the period 1996-2000 by Ljungqvist and Wilhelm (2001) for newly listed firms in US. The average (median) age of firms at the IPO is 10.5 years (6 years) in 1971-1994 and 10.9 years (6 years) in 1995-2005, very comparable to the average and median of 10.7 years and

6 years for the period 1971-2005. Thus, the age of new lists appears comparable before and after the income trust form becomes diffused among firms going public.

Figure 2.4 adds detail on the evolution of the age of newly listed firms by showing the median age of firms in each of five age quintiles from 1971 to 2005. In order to contrast the years before and after 1995, quintile breakpoints are calculated separately over the two periods. Approximately 80% of the firms going public in the sample period are younger than 16 years of age, and approximately 60% are younger than 10 years. The age of the firms in the bottom three quintiles remains stable over the sample period, while the age of the firms in the fourth quintile ranges between 10 years and 15 years. The age of the firms in the fifth quintile exhibits the highest volatility, being equal to 26 years in the period 1972-1983, 20 years in the period 1984-1986, 22 years in the period 1988-1994, 24 years in the period 1995-2005.

The evidence that firms going public in the period 1995-2005 are not significantly older than firms going public in the period 1971-1994 does not support the hypothesis that firms going public as income trusts are private firms that would have remained private had the income trust form not existed. Had this been the case, the age of the firms going public in the period 1995-2005 -- when firms start going public as income trusts -- would have been significantly higher than the age of firms going public in the period 1971-1994. The mean (median) size of newly listed firms (Table 2.3) declines from CAD$ 70 million (CAD$ 22.7 million) in 1971-1979 to CAD$ 59.5 million (CAD$ 22.38 million) in 1980-1989, then increases to CAD$ 99.8 million (CAD$ 50.9 million) in 2000-2005. Firms going public in the period 1971-1994 are smaller than firms going public in the period 1995-2005. The mean size is equal to CAD$ 71.9 million vs. CAD$94.2 million. The median size is equal to CAD$27.1 million vs. CAD$ 41.3 million.

The average profitability of newly listed firms decreases from 4.93% in 1971-1979 to 2.55% in 2000-2005. By contrast, the median first decreases from 6.54% in 1971-1979 to 3.95% in 1990-1999 then it increases to 10.11% in the period 2000-2005. The average and median profitability in the period 1971-1994, equal to 2.07% and 4.43%, are lower than the corresponding figures for the period 1995-2005, equal to 4.02% and 8.09%. Figure 2.5 shows that approximately 20% of the firms going public in the sample period have consistently negative earnings while 40% of firms have non-positive earnings. While the profitability of firms in the higher quintile increases in the latter years of the sample period, the profitability of firms in the bottom quintile declines from 1998, pointing to the entrance of relatively unprofitable firms in the capital markets.

A reason for this dramatic decline in profitability could be the shift in emphasis for new listings from historical financial performance to market capitalization occurred in 1998, likely as an adjustment to firms in the new economy (Harris, 2006), which facilitated the access of a number of unprofitable firms to the market[8]. Overall, the evidence that in recent years firms have accessed the capital market at an earlier stage of their development cycle, when they are not yet able to generate profits, is consistent with the evidence presented by Fama and French (2003; 2004) for the US market.

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[8] According to the revised requirements, companies need to have a minimum of $10 million in treasury funds, the majority of which could be money raised by the issuance of securities at the

2.5. Income Trusts and the Characteristics of Newly Listed Firms

To further investigate the effect of the diffusion of income trusts on the characteristics of newly listed firms, I assign the firms in the sample to quintiles based on age, profitability and size at the offer, regardless of whether firms go public as corporations or as income trusts. Next, I compare age, size and profitability of firms in each quintile before and after 1995. Of particular interest for the purpose of this essay is the fifth quintile, which the literature predicts as more likely to be populated by income trusts after 1995.

I divide firms into quintiles as this method allows for a more conservative test of the effect of income trusts on the characteristics of newly listed firms. For example, let us assume that after 1995 the existence of income trusts causes a number of mature and profitable firms to go public as income trusts and that at the same time a comparable number of young and unprofitable firms go public as corporations. Analyzing all firms together might mix the two effects, leading to the conclusion that firm characteristics have not changed after 1995. Considering each

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initial public offering, adequate funds to cover all planned development and capital expenditures and general and administrative expenses for a period of at least one year, and "evidence satisfactory to the TSX that the company's products or services are at an advanced stage of development or commercialization, and that the company has the required management expertise and resources to develop the business" (Harris, 2006).

quintile separately allows separating the two phenomena as they occur in two different quintiles, thereby reducing the possibility of confounding effects.

If the prediction based on Jensen's (1986) framework holds true, age, size and profitability of the firms in the fifth quintile should be significantly higher after 1995. By contrast, if the prediction based on Fama and French's (2003; 2004) framework holds true, age, size and profitability of the firms in the fifth quintile should not be different after 1995, while age, size and profitability of the firms in the lowest quintile should be lower after 1995. Table 2.4 compares mean and median age, size and profitability for the firms in each quintile before and after 1995. Of particular interest are the first (fifth) quintile, which identifies firms with the lowest (highest) age, size and profitability.

The mean (median) age for firms in the lowest quintile is 0.5 years (1 year) before 1995 vs. a mean (median) age of 0.95 years (1 year) after 1995. The mean (median) size of firms in the lowest quintile is CAD$ 2.55 million (CAD$ 1.89 million) in 1971-1994 vs. CAD$ 2.85 (CAD$ 2.58 million) in the period 1995-2005. In contrast, their mean (median) profitability decreases dramatically, from -22.3% (-13.9%) in 1971-1994 to -44.9% (-30.7%) in 1995-2005.Thus, firms in the lowest profitability quintile become even more unprofitable in recent years, while firms in the lowest age quintile become older. The evidence of a decline in profitability for firms in the lower quintile is consistent with the evidence in Fama and French (2003) for US, where in recent years a number of relatively unprofitable firms have become publicly listed.

The firms in the second lowest age quintile are characterized by higher age and size but lower profitability in 1995-2005 than in 1971-1994. Firms in the third and fourth quintile experience a significant increase in size and profitability from 1971-1994 to 1995-2005. For firms in the third quintile, the mean (median) profitability increases from 4.41% (4.52%) in 1971-1994 to 8.03% (8.09%) in 1995-2005. The mean (median) profitability for firms in the fourth quintile increases from 8.62% (8.61%) in 1971-1994 to 16.97% (17.22%) in 1995-2005. The median age of firms in the third and fourth quintile is comparable across the two periods, suggesting that in the second period newly listed firms in the intermediate quintiles become larger and more profitable, but not older.

The mean (median) age of firms in the highest quintile, equal to 32.6 years (24 years) in the period 1971-1994, is not significantly different from the mean (median) of 32.2 years (28 years) in the period 1995-2005. The median size of newly listed firms increases from CAD$ 219.5 million in 1971-1994 to CAD$ 268.9 million in 1995-2005. The mean (median) profitability also increases from 18.64% (16.44%) in 1971-1994 to 39.5% (33.54%) in 1995-2005. Thus, in the second period, firms in the highest size and profitability quintiles become significantly larger and more profitable. The increase in size in recent years, however, is not unique to firms in the highest quintile. For all but the smallest size quintile, I record an increase in size from 1971-1994 to 1995-2005.

Overall, the evidence that firms in the highest quintiles are larger and more profitable but not older after 1995 appears consistent with the hypothesis that firms going public as income trust would have gone public as corporations if the income trust form did not exist. The evidence for newly listed firms in lowest quintiles appears consistent with the evidence available for the US and suggests that over time a number of unprofitable firms have accessed Canadian capital markets.

I also compare the characteristics of firms going public as corporations before and after 1995. The aim of this part of the analysis is investigating whether the increase in size and profitability documented for newly listed firms in the highest quintile is due to the firms that go public as income trusts or whether it is a signal that over time a number of large and profitable firms have entered the Canadian capital markets, some of which have become income trusts while others have become corporations.

The results of this comparison are presented in Table 2.5. The age at the offering for firms in the bottom two quintiles and in the fifth quintile is comparable before and after 1995. Newly listed firms in the third quintile are significantly older before 1995, while newly listed firms in the fourth quintile are older after 1995. The size at the offering is significantly lower post 1995 for newly listed firms in the bottom three quintiles, while it remains stable for firms in the top two quintiles. The mean and median profitability for firms in the bottom three quintiles is higher before 1995. Mean and median profitability of firms in the fourth and fifth quintiles, however, are significantly higher post 1995: 8.62% and 8.61% vs. 13.38% and 13.24% for firms in the fourth quintile and 18.64% and 16.44% vs. 34.24% and 29.49% for firms in the fifth quintile. Thus, the evidence presented in

Table 2.5 suggests that the increase in profitability documented for the entire sample of newly listed firms (Table 2.4) is due to the entrance in recent years on the capital markets of a group of very profitable firms, some of which become income trusts while others become corporations.

2.6. Conclusion

This essay examined the characteristics of income trusts and public corporations following two complementary approaches: the first one studies income trust units in comparison to other traded securities, while the second one studies income trusts as an organizational form.

The main similarity between income trusts and corporations is the potential for conflicts between shareholders and managers, while the main differences are the absence of conflicts between shareholders and bondholders in the context of the income trust form and the lower degree of sophistication of the governance of income trusts. The comparison of the characteristics of income trust units and those of other securities, in terms of enforceability of the right to receive periodic payments and of risk, return, liquidity characteristics and initial underpricing, leads me to conclude that income trust units are quite similar to common shares.

I examined the characteristics of firms going public in Canada between 1971 and 2005 in order to study how the diffusion of income trusts affected the characteristics of newly listed firms. I documented an increase in the number of firms going public after 1980. This result is consistent with the evidence documented for the US that a larger number of firms have accessed the capital markets in recent years (Fama and French, 2003). I also documented a marked decline in the profitability of the firms going public in the recent years, likely caused by revisions of the listing requirements aimed at facilitating access to the capital markets by firms still at the research and development stage. This result is consistent with listing requirement being a key mechanism by which weak firms are discouraged from listing. The effect of lower listing requirements, however, has been balanced by the appearance in the same period in the capital market of a group of very strong firms. This essay highlights the importance of listing requirements for regulating access to capital markets and argues in favour of more rigorous empirical studies of the linkage between periods of high investor demand, revisions of listing standards, and survival of listed firms.

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Table 2.1: Newly Listed Firms by Year: 1971-2005.

The table shows the number of newly listed firms in the Canadian market in the period 1971-2005. The sample includes issuers of "common shares", "ordinary shares" or "income trust units." A firm must have information on age at the offering, book value of total assets and earnings from operations in order to be included in the sample. Offerings with offer price lower than $1 are excluded from the sample (Ritter, 1991). Data on initial public offerings in the period 1971-1984 is hand-collected from the Financial Post "Manual of Mines and Energy" and "Manual of Industrials." Data on initial public offerings in the period 1985-2005 is obtained from SDC Platinum and checked with Financial Post New Issue Database and Financial Post Manuals.

Period	All new lists	IPO as Corporation	IPO as Income trust
1971-1979	48	48	0
1980-1989	125	125	0
1990-1999	280	252	28
2000-2005	207	102	105
Total	660	527	133
1971-1994	282	282	0
1995-2005	378	245	133
Total	660	527	133

Table 2.2: Newly Listed Firms by Industry: 1971-2005.

The figure shows the number of newly listed firms by industry. Panel A illustrates my industry classification while Panel B shows the number of firms that go public as corporations and as income trusts. The sample includes issuers of "common shares", "ordinary shares" or "income trust units." A firm must have information on age at the offering, book value of total assets and earnings from operations in order to be included in the sample. Offerings with offer price lower than $1 are excluded from the sample (Ritter, 1991)

Panel A: Industry Classification

Industry	Description
Mining & Energy (SIC 01-14)	Oil and gas extraction, mining, non-metal minerals
Manufacturing (SIC 20-39)	Tobacco, textile, furniture, paper and allied products, chemical and allied products, petroleum refining, stone and clay products
Transportation & Communication (SIC 40-49)	Transportation services, pipelines, communication services
Wholesale (SIC 50-51)	Durable and non-durable wholesale products
Retail trade (SIC 52-59)	Apparel and accessories stores, general merchandise stores, home furniture and automobile dealers
Finance and Real estate (SIC 60-67)	Real estate, holding and investment offices
Services (SIC 70-89)	Legal, health, engineering and accounting services, personal and business services

Panel B: Newly Listed Firms by Industry

Period	01-14	20-39	40-49	50-51	52-59	60-67	70-89
Corporations							
1971-79	15	10	7	5	4	3	4
1980-89	25	56	6	6	4	14	14
1990-99	50	93	13	5	10	21	60
2000-05	33	30	6	2	2	10	19
Total	123	189	32	18	20	48	90
Income trusts							
1990-99	5	1	11	0	1	7	3
2000-05	8	33	15	6	16	12	15
Total	13	34	26	6	17	19	18
Corporations							
1971-94	68	107	18	15	15	21	38
1995-05	55	82	14	3	5	27	59
Income trusts							
1995-05	13	34	26	6	17	19	18

Table 2.3: Characteristics of Newly Listed Firms.

The table presents summary statistics on age, size and profitability for newly listed firms in the period 1971-2005. Age is defined as the number of years between the year of start of operations and the year of the initial public offering. Size is defined as the book value of total assets of a firm in million dollars. Profitability is measured as the ratio of earnings before income and taxes and the book value of total assets. Earnings before income and taxes and total assets are inflation adjusted using the Consumer Price Index (CPI) series obtained from the Bank of Canada web site. Firm characteristics are measured at the fiscal year end prior to the IPO. The sample includes issuers of "common shares", "ordinary shares" or "income trust units." A firm must have information on age at the offering, book value of total assets and earnings before income and taxes in order to be included in the sample. I also exclude offerings with offer price lower than $1 (Ritter, 1991). Data on initial public offerings in the period 1971-1984 are hand-collected from the Financial Post "Manual of Mines and Energy" and "Manual of Industrials." Data on initial public offerings in the period 1985-2005 are obtained from SDC Platinum and checked with Financial Post New Issue data base and Financial Post manuals.

	1971-79	1980-89	1990-99	2000-05	1971-94	1995-05	1971-05
AGE							
Mean	11.54	9.18	10.22	12.10	10.45	10.89	10.70
Median	5.00	5.00	6.00	6.00	6.00	6.00	6.00
SIZE							
Mean	69.87	59.55	87.36	99.81	71.88	94.22	84.75
Median	22.71	22.38	28.83	50.97	27.07	41.33	35.44
PROFITABILITY							
Mean	4.93	3.65	3.17	2.55	2.07	4.02	3.19
Median	6.54	5.32	3.95	10.11	4.43	8.09	5.50

Table 2.4: Characteristics of Newly Listed Firms before and after 1995.

The table compares the characteristics of newly listed firms before and after 1995. *Age* is defined as the number of years between the start of operations and the initial public offering. *Size* is defined as the book value of total assets of a firm in million dollars. *Profitability* is measured as the ratio of earnings before income and taxes and total assets. All dollar figures are inflation-adjusted. Firm characteristics are measured at the fiscal year end prior to the IPO.

		Obs.	Before 1995	Obs.	After 1995	t-test/z-test
Quintile 1						
Age	Mean	51	0.508	72	0.956	4.22^{c}
	Median		1.000		1.000	3.37^{c}
Size	Mean	52	2.547	72	2.847	0.77
	Median		1.896		2.583	0.36
Profitability	Mean	55	-22.300	74	-44.900	-4.23^{c}
	Median		-13.900		-30.700	-4.45^{c}
Quintile 2						
Age	Mean	53	2.910	71	3.442	4.05^{c}
	Median		3.000		3.000	3.51^{c}
Size	Mean	53	11.157	73	14.935	4.58^{c}
	Median		9.870		13.434	3.65^{c}
Profitability	Mean	56	0.811	76	-1.268	4.85^{c}
	Median		0.823		-0.995	3.29^{c}
Quintile 3						
Age	Mean	52	6.677	74	6.262	-1.84^{a}
	Median		7.000		6.000	-1.55
Size	Mean	54	27.754	72	42.050	10.00^{c}
	Median		27.070		41.849	7.40^{c}
Profitability	Mean	55	4.415	73	8.026	10.70^{c}
	Median		4.521		8.097	7.30^{c}
Quintile 4						
Age	Mean	50	12.220	77	12.731	1.29
	Median		12.000		13.000	1.00
Size	Mean	52	54.844	72	111.554	12.67^{c}
	Median		52.202		104.099	8.81^{c}
Profitability	Mean	54	8.620	76	16.971	22.37^{c}
	Median		8.610		17.225	9.69^{c}
Quintile 5						
Age	Mean	53	32.641	73	32.205	0.12
	Median		24.000		28.000	1.57
Size	Mean	53	262.292	71	302.617	1.43
	Median		219.500		268.904	2.66^{c}
Profitability	Mean	56	18.638	73	39.513	7.80^{c}
	Median		16.444		33.541	8.46^{c}

Table 2.5: Characteristics of Newly Listed Corporations before and after 1995.

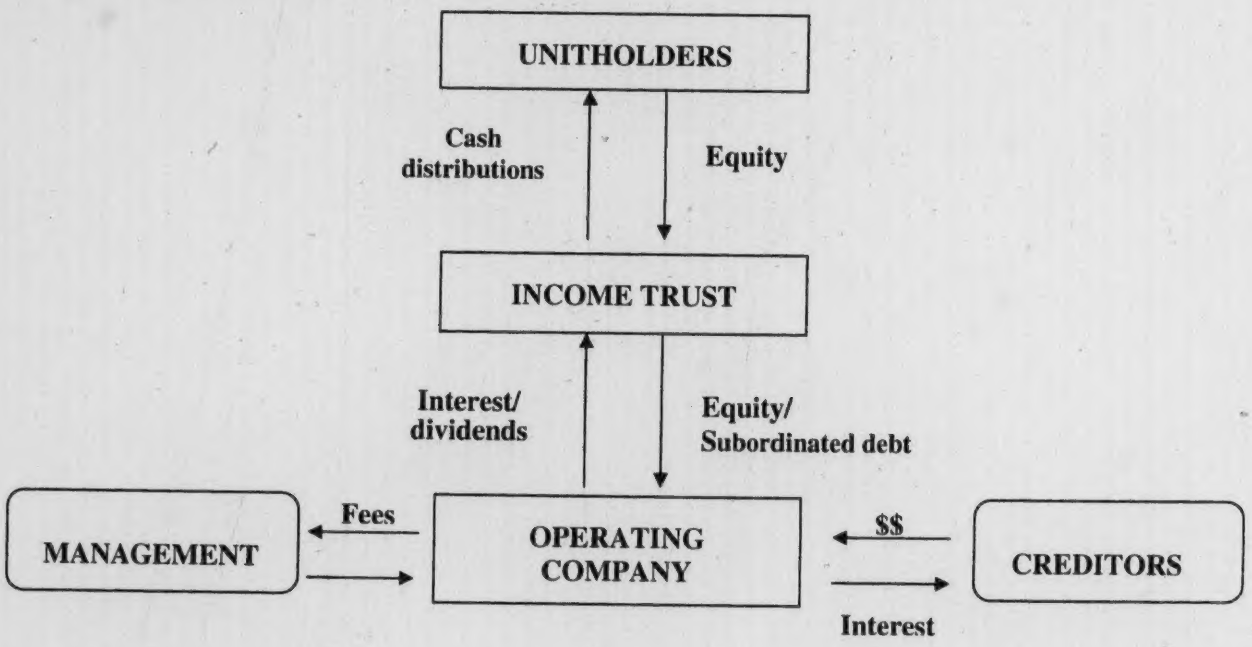
The table compares the characteristics of newly listed corporations before and after 1995. *Age* is defined as the number of years between the start of operations and the initial public offering. *Size* is defined as the book value of assets in million dollars. *Profitability* is the ratio of earnings before income and taxes and total assets. All dollar figures are inflation-adjusted. a, b and c indicate significance at the 10% level, 5% and 1% level respectively.

		Obs.	Before 1995	Obs.	After 1995	t-test/ z-test
Quintile 1						
Age	Mean	56	0.508	49	0.571	0.66
	Median		1.000		1.000	0.65
Size	Mean	52	2.548	47	1.470	-3.40^{c}
	Median		1.896		1.017	-2.82^{c}
Profitability	Mean	55	-22.300	48	-61.398	-6.34^{c}
	Median		-13.900		-58.513	-6.40^{c}
Quintile 2						
Age	Mean	56	2.911	48	2.926	0.10
	Median		3.000		3.000	0.13
Size	Mean	53	11.156	46	7.333	-6.99^{c}
	Median		9.870		7.364	-5.40^{c}
Profitability	Mean	56	0.811	48	-7.828	-12.77^{c}
	Median		0.823		-7.226	-8.75^{c}
Quintile 3						
Age	Mean	57	5.860	47	5.459	-2.58^{b}
	Median		6.000		5.000	-1.59^{b}
Size	Mean	54	27.754	48	19.714	-6.25^{c}
	Median		27.070		18.742	-5.21^{c}
Profitability	Mean	55	4.415	48	2.231	-6.06^{c}
	Median		4.521		2.167	-5.01^{c}
Quintile 4						
Age	Mean	55	11.205	46	11.833	1.90^{a}
	Median		11.000		12.000	1.84^{a}
Size	Mean	52	54.844	47	67.599	2.93^{c}
	Median		52.202		57.128	1.43
Profitability	Mean	54	8.625	48	13.384	8.23^{c}
	Median		8.612		13.243	6.53^{c}
Quintile 5						
Age	Mean	53	27.061	47	28.250	0.40
	Median		23.000		20.000	-1.11
Size	Mean	53	262.292	46	234.270	0.99
	Median		219.500		208.578	0.59
Profitability	Median	56	18.638	48	34.244	6.05^{c}
			16.444		29.494	6.63^{c}

Figure 2.1: The Income Trust Form

The diagrams illustrate the characteristics of the income trust form. *Panel A* presents the case where the operating entity is structured as a limited liability corporation. *Panel B* presents the case where the operating entity is structured as a limited partnership.

Panel A: Operating Entity as Limited Liability Corporation



Panel B: Operating Entity as Limited Partnership

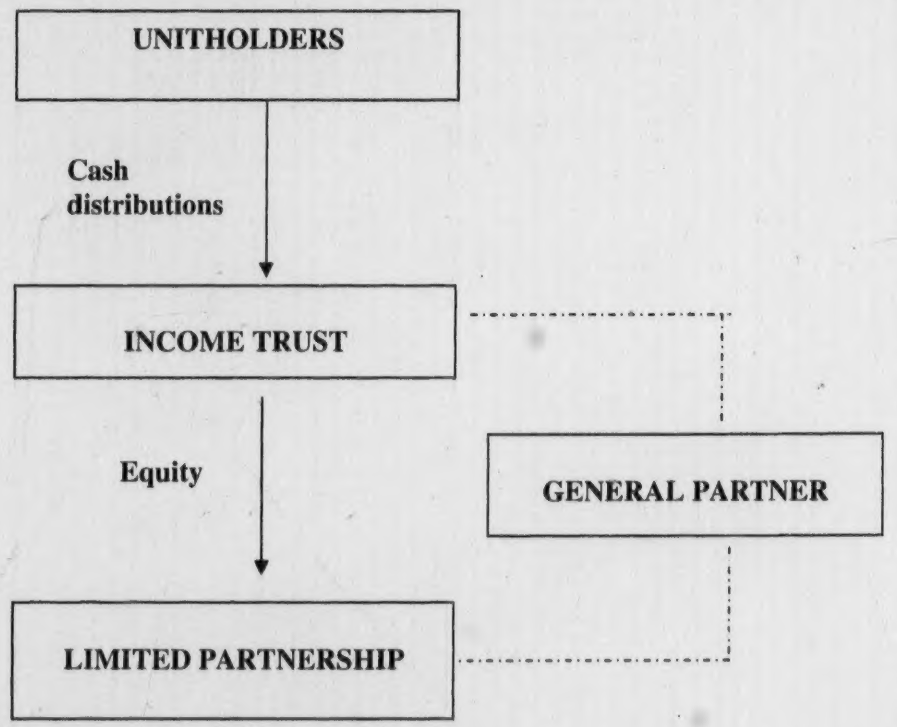


Figure 2.2: Number of Income Trust and Public Corporation IPOs by Year.

The figure shows the number of newly listed firms in the Canadian market in the period 1971-2005. The sample includes issuers of "common shares", "ordinary shares" or "income trust units." A firm must have information on age at the offering, book value of total assets and earnings from operations in order to be included in the sample. Offerings with offer price lower than $1 are excluded from the sample (Ritter, 1991). Data on initial public offerings in the period 1971-1984 is hand-collected from the Financial Post "Manual of Mines and Energy" and "Manual of Industrials." Data on initial public offerings in the period 1985-2005 is obtained from SDC Platinum and checked with Financial Post New Issue Database and Financial Post Manuals.

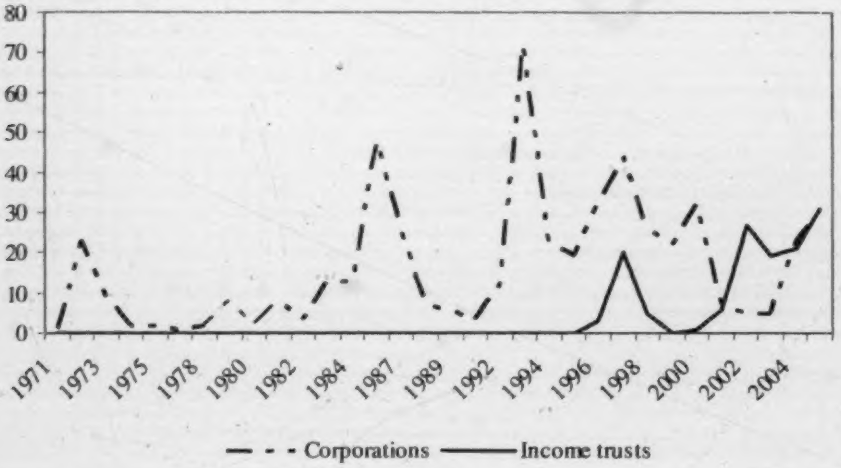


Figure 2.3: Percentage of Income Trust and Public Corporation IPOs by Year.

The figure shows the percentage of newly listed firms in the Canadian market in the period 1971-2005. The sample includes issuers of "common shares", "ordinary shares" or "income trust units." A firm must have information on age at the offering, book value of total assets and earnings from operations in order to be included in the sample. Offerings with offer price lower than $1 are excluded from the sample (Ritter, 1991). Data on initial public offerings in the period 1971-1984 is hand-collected from the Financial Post "Manual of Mines and Energy" and "Manual of Industrials." Data on initial public offerings in the period 1985-2005 is obtained from SDC Platinum and checked with Financial Post New Issue Database and Financial Post Manuals.

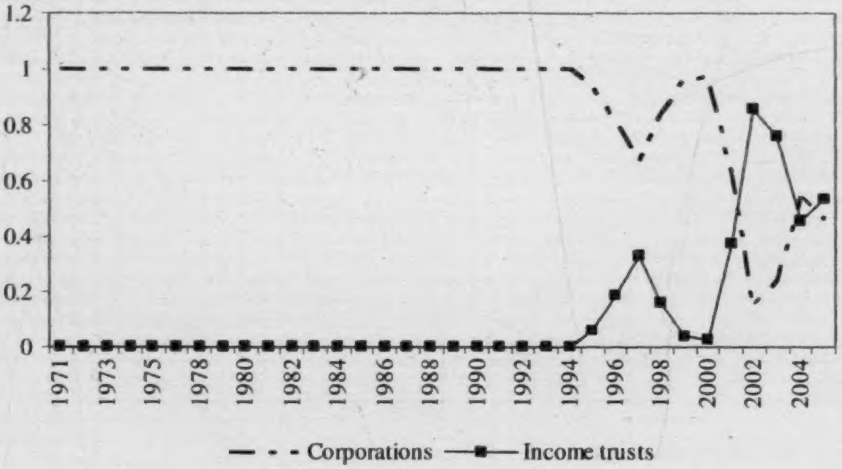


Figure 2.4: Quintiles for the Age of Newly Listed Firms.

The figure presents quintiles of firm age by year over the period 1971-2005. Age quintiles are calculated as the median value of the age of the firms in each quintile every year in the period 1971-2005. Median age in the period 1995-2005 is calculated across both corporation IPOs and income trust IPOs. Age is measured as the number of years between the year of start of operations and the year of the initial public offering. Data on initial public offerings in the period 1971-1984 is hand-collected from the Financial Post "Manual of Mines and Energy" and "Manual of Industrials." Data on initial public offerings in the period 1985-2005 is obtained from SDC Platinum and checked with Financial Post New Issue Database and Financial Post Manuals.

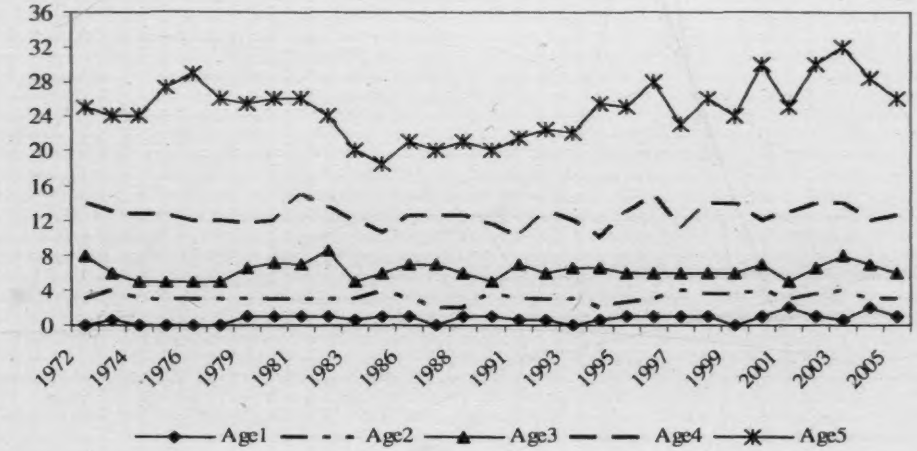
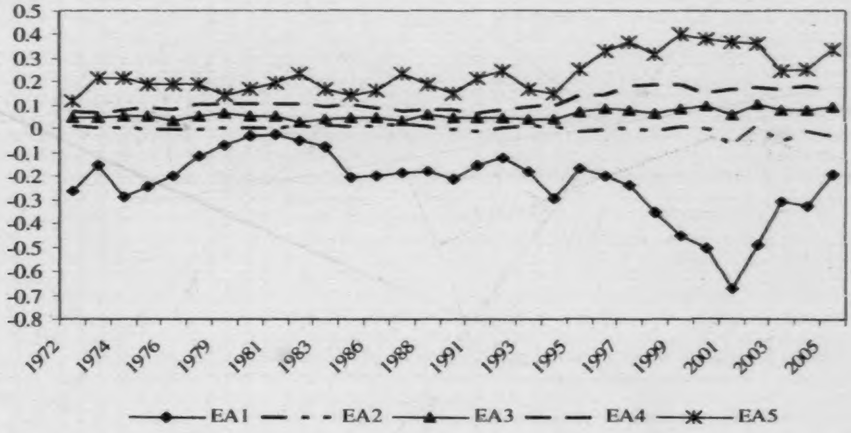


Figure 2.5: Quintiles for the Profitability of Newly Listed Firms.

The figure presents quintiles of firm profitability by year over the period 1971-2005. Profitability quintiles are calculated as the median value of the profitability for the firms in each quintile in every year in the period 1971-2005. Median profitability in the period 1995-2005 is calculated across both corporation IPOs and income trust IPOs. Profitability is measured as the ratio of earnings before income and taxes and the book value of total assets. Data on initial public offerings in the period 1971-1984 is hand-collected from the Financial Post "Manual of Mines and Energy" and "Manual of Industrials." Data on initial public offerings in the period 1985-2005 is obtained from SDC Platinum and checked with Financial Post New Issue Database and Financial Post Manuals.



Chapter 3

Choice of Organizational Form as a Trade-off between Fit and Market Timing

3.1. Introduction

This essay proposes that a firm's choice of organizational form is a trade-off between the fit with its investment opportunity set and its attempt to exploit periods of favourable market valuations for a given organizational form. For the most part, the corporate finance literature motivates a firm's choice by the fit with its investment opportunity set, thereby reducing agency costs (Brickley, Dark and Weisbach, 1991; Deli and Varma, 2002; Fama and Jensen, 1983a, b; Jensen and Meckling, 1976), and tax costs (Guenther, 1991; Scholes and Wolfson, 1987, 1990). However, the external determinants of choice and their potential consequences remain under-explored. An emerging body of evidence is now proposing that external factors such as the level of stock-market returns (Baker and Wurgler, 2000), and industry valuations (Mitchell and Mulherin, 1996) also affect a firm's decision; an activity known as market timing. The notion of market timing refers to firms making choices that aim "to exploit temporal fluctuations in the cost of equity relative to the cost of other forms of capital" (Baker and Wurgler, 2002). This emerging evidence on market timing motivates some firm decisions with incentives to exploit favourable external market conditions. In this paper, I propose that market timing (Baker and Wurgler, 2000; 2004; Rajan and Servaes, 1997) affects the choice of organizational form. I show that firms are more likely to adopt the organizational form that receives higher market valuations even when it does not match their asset-base well.

While the public corporation remains the dominant organizational form chosen by firms, alternatives are available in several countries. These include REITs in US, Japan, UK, and Australia; master limited partnerships (MLPs) in the US; and income trusts in Canada. For the most part, the literature assumes that widely held firms become public corporations, and few papers address the choice of alternatives. A study by Ciccotello and Muscarella (1997) is the exception. Their study examines the choice between a public corporation and a master limited partnership (MLP) using a sample of firms that convert from public corporation to MLP. They find that conversions are more likely among profitable firms operating in low-growth industries.

While Ciccotello and Muscarella's (1997) findings support Jensen's (1989) argument that the corporate form is ill-suited for mature firms, they do not explain the dramatic swings in the adoption of organizational forms alternative to the public corporation. Another aspect that remains under-explored is the potential consequences of external factors on the amount of proceeds raised and the costs of going public. The trade-off is: will firms do what is right for them as determined by their asset-base, or will they be lured by potential benefits of higher valuations of a given organizational form? This trade-off raises a few important questions. Can factors other than fit affect choice? What happens if an organizational form, that is unfit for a given firm, receives higher market valuations than the one that better fits

its asset base? Do market timing driven choices lead to lower or higher costs while going public?

Anecdotal evidence from the press suggests that this investigation is a worthwhile task. For example, an article in *The Globe and Mail* reports that the insiders at General Electric Co. have chosen to spin-off General Electric Canada through an income trust IPO "to take advantage of high premiums available in the Canadian market for income trust offerings"[9]. Another article observes that as income trusts generally trade at higher valuations than public corporations, this lowers their costs of capital and makes the income trust form attractive also for growth-oriented firms which would have been traditionally considered a poor fit for this organizational form [10]. More recently, an article commenting on the decision by the Canadian government to remove tax-benefits from income trusts highlighted "that the majority of income trusts are small- to medium-sized businesses that use the trust structure to raise the capital they need to reinvest… (and) grow"[11]. These accounts in the press seem to highlight that market timing incentives to raise capital on attractive terms might affect the choice of organizational form.

The data needed to study the impact of market timing on the choice of organizational form are generally not available for the US where alternative organizational forms mainly arise from the conversion of public corporations[12]. Conversions are non-cash transactions where no shares are issued and where the shares of the new entity are allocated to the existing shareholders. By contrast, in Canada an increasing number of firms have chosen to go public as income trusts, an organizational form similar to the MLP. Initial public offerings (IPOs) are cash transactions where new shares are issued and new shareholders are brought into the firm (Michaely and Shaw, 1995). Hence, the Canadian context allows an investigation of the impact of market timing on the choice of organizational form. The lack of academic studies on the market timing determinants of choice of organizational form, as well as anecdotal evidence available in the public press, motivate this exploration of the trade-off between fit and market timing.

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[9] "Blue-chip Canada explores trust spin-offs; Big names consider converting divisions", *The Globe and Mail*, 30 March 2006.

[10] "Who do you trust will be a trust? CI's move opens speculation on who is next; so far, AGF's a maybe, IGM a no", *The Globe and Mail*, 28 March 2006.

[11] "Income trust decision devastates Canadians", Winnipeg Free Press, 3 November 2006.

As the two major organizational forms in Canada, income trusts and public corporations are different in two main ways. First, income trusts classify as flow-through entities for tax purposes (until 2011) as long as they distribute all available earnings to the investors ('unit holders'), and this way avoid paying income taxes. Second, income trusts normally distribute available earnings to the investors on a regular basis. However, income trusts and public corporations also share some similarities. First, both entities are publicly traded. Hence, one can study them simultaneously so as to study issues related to choice of organizational form. Second, neither the distributions paid by income trusts nor the dividends paid by public corporations are guaranteed. This implies that unit holders of income trusts, like shareholders of public corporations, can only react to a cut in the level of periodic distributions by selling their interest in the firm thereby causing a reduction in the market value of the shares (or units) of the firm (Lang and Litzenberger, 1989)[13].

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[12] Muscarella (1988) reports 50 IPOs of MLPs over the period 1983-1987 vs. 116 conversions.

In this study, I use a sample of 272 firms that go public between 1995 and 2005. Of these firms, 128 go public as corporations and 144 go public as income trusts. I analyze two complementary motivations for choosing the income trust form. First, consistent with free cash flow theory (Jensen, 1986), I argue that asset base characteristics have a significant impact on this choice. Mature and profitable firms are more likely to choose the income trust form. I call this the '*asset base hypothesis*.' Second, I extend earlier studies on market timing (Baker and Wurgler, 2000; 2002; 2004) and propose that the choice of organizational form could also be driven by external factors. That is, periods of high valuations of income trusts relative to public corporations will increase the likelihood of a firm choosing the income trust form. I call this the '*market timing hypothesis*.' I find support for both hypotheses. I investigate further the trade-off between the two. Firms trade off between fit and market timing in order to maximize the benefits of market timing vs. the long-term costs of making unfit choices. The proceeds of the initial public offering are affected by issue costs including underpricing and underwriting fees. Any gains from market timing could be offset if underwriters charge higher fees for firms selecting an inappropriate organizational form or if underpricing is higher for such firms. However, I find that market timers do not face increased costs of going public. On the contrary, they face lower costs.

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[13] The governance of trusts is still unclear and opens venues for future research.

This essay makes several contributions to the corporate finance literature. First, it shows that the choice of organizational form is best explained by both internal and external factors. While previous studies solely focus on internal attributes (Ciccotello and Muscarella, 1997; Lehn, Netter and Poulsen, 1990), this essay documents that external factors, such as the relative market valuations for alternative organizational forms, also affect this choice.

Second, this essay contributes to the market timing literature by showing that not only are insiders able to identify opportunities for issuing shares when market conditions are favourable (Baker and Wurgler, 2000; Lerner, 1994, Lowry, 2003; Pagano, Panetta and Zingales, 1998; Ritter, 1984), but they are also able to correctly identify and adopt the organizational form that receives higher valuations.

Third, this essay explains how choices driven by market timing as opposed to fit may lead to maximization of proceeds of the IPO and to lower costs of going public. Market driven choices appear to have positive short-term effects when a firm goes public. In the next essay of this dissertation, I explore the long-term effects of market timing driven choices on investment and performance. Choices driven by market timing may involve a trade-off between positive short-term effects and negative long-term effects.

Fourth, this essay contributes to the literature on the choice of organizational form by proposing a cleaner test of this choice. For example, Ciccotello and Muscarella (1997) use matching on industry and firm size to investigate the factors affecting the choice between public corporation and MLP. I argue that a more conclusive investigation would require matching on choice. That is, the sample of firms converting to MLP should be matched with firms that choose not to convert despite facing the same opportunity. In this study, firms that choose to go public as income trusts are matched with firms that choose to go public as corporations despite having the opportunity of choosing either of the two organizational forms.

The subsequent sections of the paper are structured as follows. Section 3.2 presents the background discussion and hypotheses. Section 3.3 discusses the sample and presents descriptive statistics for income trust IPOs and public corporation IPOs. Section 3.4 tests the '*asset base hypothesis*' and the '*market timing hypothesis*'. Section 3.5 investigates the trade-off between fit and market timing by comparing the characteristics of fit and unfit choices of organizational form, and their costs of going public with specific reference to underpricing and underwriter fees. Section 3.6 presents tests concerning the robustness of the results. Section 3.7 concludes the paper.

3.2. The Choice of Organizational Form

Interest in questions related to the choice of organizational form can be traced back to Jensen and Meckling (1976), who use the concept of organizational form to indicate the way contractual relationships are structured within an organization. They argue that firms should choose the organizational form that allows them to minimize the agency costs of internal contracting. Fama and Jensen (1983) compare the costs of alternative organizational forms and conclude that only those that minimize agency costs, allowing a firm to supply a product at the lowest possible price after covering costs, will survive. Jensen (1989) goes as far as to argue that the public corporation might have "outlived its usefulness" as it is prone to agency problems. Scholes and Wolfson (1987, 1990) extend this argument to consider the impact of taxes. They claim that organizational forms are chosen to minimize both agency costs and tax costs.

Empirical studies support the motivation that reducing agency costs is a primary influence affecting choice. Brickley et al. (1991) propose that reducing "the potential costs associated with various types of agency problems is a major determinant of organizational form" as it relates to franchising. More recently, Deli and Varma (2002) document that the open-end structure is suitable for mutual funds holding more liquid securities as the threat of withdrawal of funds acts as disciplining mechanism for open-end fund managers. The close-end structure is instead suitable for investment funds holding illiquid securities as it mitigates the conflict between investors with different horizons.

However, the evidence on the role of taxes in motivating choice is mixed. On the one hand, studies such as Guenther (1992) find that differences in the relative tax costs of alternative organizational forms influence firm choices and are associated with changes in their capital structure. On the other hand, Gordon and Mackie-Mason (1991, 1994) propose that the choice of organizational form is not very responsive to taxes and does not lead to major efficiency gains. Some previous empirical research on income trusts (Aguerrevere, Pazzaglia and Ravi, 2005) finds support for Gordon and Mackie-Mason's argument that tax advantages do not seem to be the main driver of the adoption of an organizational form.

I now specifically focus on issues related to how agency costs affect choice, and develop the '*asset base hypothesis*' which predicts that mature and profitable firms are more likely to become income trusts due to fit. Broadly speaking, some studies have shown that firms choose the organizational form that better fits their characteristics (Ciccotello and Muscarella, 1997; Kaplan, 1989; Lehn et al. 1990; Masulis, 1987). Also, a change in firm characteristics leads to a change in organizational form. Ciccotello and Muscarella (1997) examine the determinants of the decision to switch from public corporations to MLPs. They find that firms converting to MLPs operate in mature industries, have greater operating income, and distribute more cash than public corporations. One may infer that as firms reach the maturity stage, they tend to adopt organizational forms which favour the distribution of cash to the investors over the re-investment of funds within the firm, most likely due to their low growth potential[14].

Establishing the '*asset base hypothesis*' is important for several reasons. First, it establishes continuity with extant literature on the free cash flow theory that has thus far primarily focused on the US markets. Second, support for this hypothesis implies that tax benefits are not the only factor driving the choice of organizational form. And third, asset base characteristics are thus far the most theoretically sound way to distinguish fit adopters of an alternative organizational form from market timers.

A complementary explanation is the '*market timing hypothesis*' which proposes that periods of relatively high valuations of an organizational form increase the likelihood of its adoption. This hypothesis draws upon a relatively recent stream of literature proposing the role of market timing (Baker and Wurgler, 2000; 2001: 2004; Mitchell and Mulherin, 1996; Pagano, Panetta and Zingales, 1998) on choices made by firms. As an example of this phenomenon, Mitchell and Mulherin (1996) show that the tendency of mergers to cluster over time is consistent with firms taking advantage of industry and economic contractions. More recently, Baker and Wurgler (2000) show that firms tend to issue equity during periods of high market returns and before periods of low returns and to switch to debt financing before market run-ups. Ikenberry, Lakonishok and

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[14] This is the central argument behind the free cash flow theory proposed by Jensen (1986) and his invocation of leverage buyouts (Jensen, 1989).

Vermaelen (1995) show that repurchase plans tend to coincide with periods when a firm's equity is undervalued.

Other relevant studies discussing the impact of market timing on firm choices include Lee, Schleifer and Thaler (1991), Helwege and Liang (1996), Lowry (2003), and Rajan and Servaes (1997), who show that firms time their IPO to coincide with periods of relatively high stock returns. Similarly, Lerner (1994) documents that venture capitalists specializing in the biotech industry take firms public when the biotech stock market index is relatively high. These findings are consistent with investors being overly optimistic during market run-ups and being willing to overpay for IPOs.

Most closely relevant to this essay is the study by Pagano, Panetta and Zingales (1998). While the primary focus of their paper is on showing why firms go public, they make an important contribution by providing some evidence that firms are more likely to go public when valuations of public firms in their industry are higher. They conclude that the timing of IPOs is chosen to take advantage of industry-wide overvaluations. However, a major issue still remains unresolved in that the choice of organizational form might occur between two or more viable alternatives within a given type (e.g. publicly traded entities). This raises a question that motivates the second hypothesis: does market timing affect which organizational form is chosen once a firm decides to go public?

While firms choosing an organizational form due to market timing rather than fit could potentially maximize the proceeds of their IPO, they could also be facing increased costs of going public – initial underpricing and underwriting fees – due to the choice of an inappropriate organizational form. The possibility that increased costs of going public might prevent firms from taking advantage of high valuations, therefore, needs to be considered. While there has been some research on how the choice of organizational form affects firm performance (Ciccotello and Muscarella, 1997; Jensen, 1989), with the noticeable exception of Muscarella (1988), little work has linked this choice to the costs of going public.

The average IPO experiences significant underpricing on the first day of trading in the aftermarket (Ibbotson, 1975; Ibbotson, Sindelar and Ritter, 1994; Logue, 1973). Initial underpricing represents the largest fraction of the costs of going public. Ritter (1987), for example, reports that for roughly 1,000 firms going public in US over the period 1977-1982, average initial underpricing constituted 14.8% of the proceeds of the offering, vs. 8.67% for underwriting fees and 5.36% for administrative and legal costs. These early studies attribute initial underpricing to the asymmetric information between the parties involved in the IPO process.

From an information asymmetry standpoint, one might argue that a payout intensive organizational form such as that of income trust is generally chosen by firms with a mature asset base (Jensen, 1989), which is easier to value. This should lead to lower underpricing. Also, investor uncertainty regarding future returns is reduced as firms commit to paying out all available earnings, thereby reducing managerial discretion. By this logic, income trusts should experience lower underpricing particularly when book-building is used to allocate the shares offered in the IPO. With book-building, underwriters solicit indications of interest in the offer to extract information from informed investors and revise the offer price (Benveniste and Spindt, 1989). In the case of income trusts the need for information revelation is lower, leading to lower initial underpricing. From a market timing standpoint, one may argue that the higher level of valuations of a given organizational form should lead to lower underpricing because high market valuations allow a firm to set an offer price closer to the true value due to the reduced risk that investors may not participate in the offer.

Underwriter fees are another major cost faced by firms when they go public (Chen and Ritter, 2000; Ritter, 1987). The extant literature offers two contrasting predictions on the impact of market timing on underwriter fees. On the one hand, some previous studies have shown that highly reputable banks underwrite less risky offers (Carter and Manaster, 1990; Chemmanur and Fulghieri, 1994). From this point of view, market timers should pay higher fees than firms that have a better fit with the organizational form. This is because underwriters do not want to put their ‘reputational capital’ at stake (Beatty and Ritter, 1986). On the other hand, from a market timing perspective, market timers should face lower underwriting fees than firms who choose the fit but less valuable organizational form. This is because investor demand for the highly-valued organizational form is high and will translate into lower risk for the underwriter that the offer will be under-subscribed.

3.3. Data and Summary Statistics

3.3.1. Variables

This section describes the measures of market timing, costs of going public, and underwriter reputation that will be used throughout the paper.

The first market timing measure builds upon Pagano, Panetta and Zingales' (1998) finding that firms are more likely to choose the organizational form of public corporation when valuations of public corporations in their industry increase. It also builds upon other evidence that the price to earnings (P/E) ratio of firms already public provides a fairly precise assessment of the value of a firm going public (Kim and Ritter, 2001) The first measure is defined as

$$Industry \quad relative \quad P/E_{i,-15} = \frac{\frac{1}{k}\sum_{k}\left(\frac{P_{ik}}{E_{ik}}\right)_{Income \quad tr.}}{\frac{1}{j}\sum_{j}\left(\frac{P_{ij}}{E_{ij}}\right)_{Public \quad corp.}}$$

The numerator is the average P/E ratio of income trusts trading in a particular industry 15 days before the offering. The denominator is the average P/E ratio of public corporations trading in the same industry 15 days before the offering. The choice to calculate industry valuations of income trusts relative to public corporations 15 days before the offering is made to capture a situation where a firm has started the registration process and, on observing the relative valuations for income trusts and public corporations in its industry, is able to switch between the two organizational forms. Values of the industry relative P/E ratio greater than one suggest that valuations for income trusts trading in the industry are higher than those of public corporations at that point in time. I expect that firms are more likely to go public as income trusts when the P/E ratio of income trusts in their industry is higher than the P/E of corporations.

The second measure of market timing relates the choice to become an income trust to higher demand in the market for this organizational form. To investigate this, I define a second measure based on P/E ratio aggregated across industries. This measure is defined as

$$Aggregate \quad relative \quad P/E_{-15} = \frac{\frac{1}{k}\sum_{k}\left(\frac{P_k}{E_k}\right)_{Income\ tr.}}{\frac{1}{j}\sum_{j}\left(\frac{P_j}{E_j}\right)_{Public\ corp.}}$$

The numerator is the average P/E ratio of income trusts trading on the market two weeks before the offering. The denominator is the average P/E ratio of public corporations trading on the market two weeks before the offering. Values of the aggregate relative P/E greater than one suggest that market valuations of income trusts are higher than those of public corporations at that point in time. I expect that firms going public as income trusts will do so when the P/E ratio of income trusts trading in the market is higher than the P/E of public corporations.

I define the costs of going public (Ritter, 1987) in terms of underwriting fees and initial underpricing. Following Ritter (1987), initial underpricing is measured by the difference between the close price on the first day of trading and the offer price, divided by the offer price. *Underwriter fees* are the commissions paid to the underwriter as a percentage of the gross proceeds of the offer.

I measure the reputation of an underwriter using the underwriter's market share. Beatty and Ritter (1986) were among the first to establish a link between investment bank reputation and market share. In their model, more reputable banks face a higher incentive to preserve their market share, as their 'reputation capital' allows them to charge higher underwriting fees. A similar argument is made by Chemmanur and Fulghieri (1994) and by De Long (1991).

Prior studies point out that the presence of a reputable investment bank in the underwriting syndicate could lower initial underpricing due to possible certification effects (Beatty and Ritter, 1986). Previous studies on the US equity market prevalently use the Carter and Manaster ranking of underwriter reputation based on tombstone announcements of IPOs. I do not use this measure in this essay as it is not available for the Canadian market[15]. I develop a measure for underwriter reputation by creating a binary classification based on its market share. A bank's market share is defined as the fraction of IPOs managed or co-managed by this bank[16]. In case of co-managed offerings, each co-manager is given credit for the entire amount (Beatty and Ritter, 1986; Fang, 2005).

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[15] I do not use the *Financial Post* ranking of Canadian underwriters as it was discontinued in 1987, almost ten years prior to the start of the sample period. Moreover, this measure does not capture the potential of a new entrant to the underwriting market, such as the underwriters formed by the Canadian banks following the 1987 change in legislation.

[16] Megginson and Weiss (1991) and Fang (2005) show that the results obtained using a measure of underwriter reputation based on market share are equivalent to the ones obtained using a measure based on tombstone announcements.

The distribution of the underwriters by market share is presented in Figure 3.1 and Table 3.1. An investment bank is defined as reputable if the total amount underwritten over the sample period is above CAD$ 1 billion. This amount is chosen as it appears to be a natural cut-off in the distribution of the amount underwritten by each investment bank. Compared to a measure based on tombstone announcements, a binary classification is likely to enable "a better inference on the qualitative differences between large, prominent underwriters and their smaller rivals" (Fang, 2005).

3.3.2. Data

I identify the samples of firms going public as income trusts and firms going public as corporations from the *Financial Post* 'New Issue' database. Income trusts IPOs are initial public offerings where the securities being issued are trust units. Public corporation IPOs are initial public offerings where the securities being issued are common shares.

I find 381 income trusts IPOs and 1,010 public corporations IPOs in Canada over the period 1995-2005. I exclude 209 IPOs of income funds investing in income trust units ('investment funds'), as for them going public as an income trust is the only viable alternative as per Canadian regulations[17]. I exclude six IPOs announced by firms previously trading as public corporations while converting to income trust ('income trust conversions') and one income trust IPO and 809 public corporations IPOs with issue price lower than $1 (Ritter, 1991). Next, I restrict the sample to only firm-commitment deals, as standard in the literature (Beatty and Ritter, 1986; Ritter, 1984; 1991). These sampling criteria leave 144 firm-commitment income trust IPOs and 128 firm commitment public corporation IPOs.

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[17] These are mutual funds that exclusively specialize in investing in income trust units.

The distribution of income trust IPOs and public corporation IPOs by year is shown in Panel A of Table 3.2. In the first six years of the sample period, public corporation IPOs occur more frequently than income trust IPOs (64.8% of the firms going public as public corporations in the sample do so over the period 1995-2000, vs. 29.2% of the firms going public as income trusts). The only exception is year 1997, when the percentage of income trust IPOs relative to the total number of IPOs is higher than the percentage of public corporation IPOs (66% of the initial public offerings announced are income trust IPOs vs. 34% of income trust IPOs).

In the last five years of the sample period, the trend reverses with income trust IPOs representing the largest percentage (70.8% of the firms going public as income trusts in the sample do so over the period 2000-2004, vs. 35% of the firms going public as public corporations). Years with the lowest percentages of income trust IPOs are 1995, 1999 and 2000 (10%, 8% and 0% of the total number of IPOs are income trust IPOs) while years with the highest percentage of income trust IPOs are 2001, 2002 and 2003 (69%, 90% and 75% of the total number of IPOs are income trust IPOs). A possible rationale for low income trust activity in the period 1998-2000 is that the stock market was providing very high returns due to the tech bubble causing firms to go public as public corporations.

Panels B and C of Table 3.2 present industry breakdown and aggregate proceeds by industry for income trust IPOs and public corporation IPOs. The industry classification is based on the first two digits of the SIC code. I use the same industry classification of Wu and Kwok (2002), with an additional industry group to account for the real estate sector, which was not included in their study. Firms with first two digits of the SIC code between 60 and 67 are classified as real estate firms. According to this industry classification, income trust IPOs occur in a number of industries. The highest percentages of income trust IPOs are in the Transportation and Communication industry (76%) and in the Retail trade industry (81%). The lowest percentages of income trust IPOs are in the Manufacturing industry (42%) and in the Services industry (41%). Aggregate proceeds for income trust IPOs span from a minimum of CAD$ 385 million for the Wholesale industry to a maximum of CAD$ 6,025 million for the Manufacturing industry, while aggregate proceeds for public corporations IPOs span from CAD$ 55 million for Wholesale industry to CAD$ 4,248 million for the Real Estate industry.

Panel D of Table 3.2 reports statistics on the age of income trust IPOs and public corporation IPOs at the offering, measured as the number of years between start of operations and announcement of the offering. The date of start of operations is obtained from the offering prospectus. The figures for income trust IPOs reveal that these firms are generally older than their counterparts when they go public. Only 40.2% of the firms going public as income trusts are younger than 10 years of age as opposed to 71.1% of the firms going public as corporations.

3.4. The Choice of Organizational Form

3.4.1. Univariate Analysis

Table 3.3 presents descriptive statistics on firm and offer characteristics of income trust IPOs and public corporations IPOs. This information is collected from the offering prospectus, which is available for 129 firm-commitment income trust IPOs and 122 firm-commitment public corporations IPOs. I lose one income trust IPO and one public corporation IPO for which the initial return could not be calculated due to missing values, and one income trust IPO for which the market timing measures could not be calculated. The final sample consists of 127 income trust IPOs and 121 public corporation IPOs.

Income trusts IPOs are larger in size than public corporation IPOs. Both the mean and the median size at the offering for income trust IPOs, as measured by the natural logarithm of the book value of total assets, are higher than the corresponding figures for public corporation IPOs. These differences are statistically significant. The average age for public corporation IPOs is approximately 10 years and the median age is 5 years. Income trusts IPOs are much older. The average age of income trust IPOs is approximately 18 years and the median age is 13 years.

I am also interested in investigating whether firms going public as income trusts use a lower fraction of internally generated funds for investment. I use the ratio of operating cash flow minus investment cash flows (cash outflow) and the book value of the assets of a firm to measure that fraction of operating cash flows used to fund investment. This decision is motivated by the fact that I cannot calculate alternative measures of the fraction of operating cash flows used for investment, such as the cash burn rate (Lewellen, 2003), as most part of income trust IPOs report no cash holdings. At least 25% of the firms going public as income trusts report $0 in cash the year-end prior to the IPO. A large negative value of cash outflow to assets ratio suggests that a firm invests an amount greater than its operating cash flows, while a large positive number suggests that a firm invests an amount lower than its operating cash flows. This measure captures the distinction between high growth firms (those with negative cash outflow to assets ratios) and mature firms (those with positive cash outflow to assets ratios).

Income trust IPOs exhibit values of the cash outflow to assets ratio lower than the corresponding figure for public corporations. This suggests that they use a lower fraction of operating cash flows for investment. The negative sign of the average cash outflow for income trust IPOs suggests that several of them are high growth firms rather than mature firms as predicted by the free cash flow theory (Jensen, 1986). This characteristic makes them less than ideal candidates for a payout-intensive form such as the income trust form, and at a broad level appears to support the market timing hypothesis. This finding is consistent with evidence by De Angelo, De Angelo and Stulz (2007) that a large fraction of firms raise capital through seasoned equity offerings to solve liquidity squeezes.

I also compare the profitability of income trust IPOs and public corporation IPOs by calculating the ratio of operating income before amortization and depreciation and book value of total assets. This comparison reveals that firms that go public as income trusts are more profitable than firms that go public as corporation. The profitability of the average (median) income trust IPO is 17% (14%) vs. an average (median) of 3% (7 %) for public corporations IPOs. This appears consistent with the prediction of the free cash flow theory that payout intensive organizational forms are more suitable for mature and profitable firms.

Following previous literature (Ritter, 1984), I measure ex-ante uncertainty with the standard deviation of daily returns in the aftermarket. The average (median) standard deviation of daily returns for income trust IPOs is 1.19% (1.03%), vs. 3.3% (2.65%) for public corporations IPOs. Hence, income trust IPOs appear comparatively easier to value. Income trusts IPOs are offered at an average price of $10.16 per unit, lower than the average offer price of $11.3 per share for public corporations IPOs. The offer price for income trust IPOs appears to cluster at $10 per unit. As pricing is tied to the level of expected distributions per unit an integer price equal to $10 per unit could be chosen to obtain an integer yield, which is more easily understood by the investors.

The average income trust IPO raises slightly higher gross proceeds than the average public corporation IPO (CAD$ 150.5 million vs. CAD$ 127.8 million). The difference becomes more pronounced when considering the medians (CAD$ 129 million vs. CAD$ 50 million). However, existing shareholders of firms going public as income trusts are more likely to sell shares at the IPO than shareholders of firms that choose to go public as corporations. On average 50% of income trust IPOs have a secondary component, vs. 15% of public corporations IPOs. When I control for the number of shares sold in the secondary offer, the average capital raised by income trust IPOs and public corporations IPOs appears comparable, while the median capital raised is lower for income trusts. The evidence that a number of firms going public as income trust raise capital at the IPO is in contrast with the argument that firms choosing payout-intensive organizational forms generate large amounts of cash and have limited growth opportunities (Jensen, 1986) and hence do not need to tap the capital markets.

Firms choosing to go public as income trusts are more likely to hire a prestigious underwriter: 93% of income trust IPOs are managed by a reputable underwriter vs. 69% of public corporation IPOs. The evidence that income trust IPOs exhibit lower ex-ante uncertainty and are more likely to be managed by reputable underwriters is in contrast to the certification hypothesis (Booth and Smith, 1986), which predicts that firms exposed to higher ex-ante uncertainty are more likely to hire a prestigious investment bank. Instead, it appears consistent with studies proposing that more reputable underwriters maintain their market share by managing less risky offers (Chemmanur and Fulghieri, 1994; Fang, 2005). At a broad level, the evidence presented in Table 3.3 supports the argument that firms choosing to become income trusts are more likely to be large, mature and relatively profitable. However, it also reveals that a number of firms going public as income trusts are less profitable and need to raise capital. This evidence appears consistent with the hypothesis that some firms choose to go public as an income trust as it allows them to maximize the proceeds of the IPO.

I analyze the effect of the relative valuations of income trusts and public corporations on the choice of organizational form and on the costs of going public in Table 3.4. The average (median) firm goes public as an income trust when the valuations for income trusts in its industry are 25% (21%) higher than those of public corporations. The average (median) firm goes public as a corporation when the valuations for income trusts in its industry are only 15% (14%) higher than those of public corporations. The difference in means (medians) is significant. Firms choosing to become public corporations do so even if income trusts receive higher valuations. The average (median) firm goes public as an income trust when the valuations for income trusts in the entire market are 29% (30%) higher than those of corporations. The difference is statistically significant. These results suggest that income trust IPOs tend to occur in periods where valuations of income trusts are relatively high.

I also examine the relationship between costs of going public and choice of organizational form. The average underwriter fees for income trust IPOs are 5.76% vs. 5.93% for public corporations IPOs. The difference in means is significant at 5%. The finding that underwriter fees tend to cluster at 6% is consistent with the study by Kryzanowski and Rakita (1999) who present evidence that underwriting fees in Canada cluster at 6% rather than at 7%, as documented by previous studies on the US market (Chen and Ritter, 2000). The average income trust earns an initial return of 1.05%, lower than the. 8.03% earned by the average public corporation IPOs. A firm earning a positive initial return on the first day of trading leaves an amount equal to initial return multiplied by number of shares offered for the investors to reap. This amount left on the table (Ritter, 1984) is the indirect costs of going public.

3.4.2 Multivariate Analysis

The univariate comparisons in Table 3.3 and Table 3.4 provide initial evidence that the choice between income trust and public corporation is affected by the characteristics of the asset base of a firm as well as by market timing. In this section I investigate the robustness of these earlier findings in a multivariate setting. I estimate the probability of going public as an income trust using a specification similar to Pagano, Panetta and Zingales (1998):

$$Pr(I.T._{i}) = F(\beta_0 + \beta_1 * Size_i + \beta_2 * Age_i + \beta_3 * Cash\ outflow_i / A_i + \beta_4 * Opinc_i / A_i + \beta_5 * Timing_i)$$

The dependent variable is a dummy variable taking value 1 in case a firm goes public as an income trust. *F(.)* is the cumulative distribution function of a standard normal variable. The measure of market timing is the *Aggregate relative P/E ratio* in specifications 2-3 and the *Industry relative P/E ratio* in specifications 4-5. The remaining independent variables (*Size, Age, Cash outflow/ Assets, Operating income/ Assets*) are as defined in Section 3.3.

In the first specification of Table 3.5, I test the '*asset base hypothesis.*' The positive coefficient on *Size* shows that larger firms are more likely to go public as an income trust. Similarly, the positive coefficient on *Age* indicates that older firms are more likely to go public as an income trust. Both coefficients are statistically significant. A one standard deviation increase in size increases the sample average probability that a firm will go public as an income trust by 6.0%, while a one standard deviation increase in age increases the sample average probability that a firm will go public as an income trust by 10.8%.

The coefficient on the cash outflow to assets ratio is negative as expected, but is not significant suggesting that it is not necessarily true that firms that go public as income trusts use a lower fraction of their operating cash flows for investment. The positive coefficient on the operating income to assets ratio is consistent with the prediction of the free cash flow theory, and the relative coefficient is statistically significant. Thus, profitability appears to be one of the key factors driving the choice of going public as an income trust. A one standard deviation increase in profitability increases the sample average probability that a firm will go public as an income trust by 10.8%.

In specifications (2) and (3) of Table 3.5, I test the '*market timing hypothesis.*' In specification (2), the positive and significant coefficient on the *Aggregate relative P/E ratio* suggests that firms are more likely to go public as an income trust when market valuations of income trusts are relatively high. A one standard deviation increase in the aggregate relative P/E ratio increases the sample average probability that a firm will go public as an income trust by 17.9%. The effect of market valuations on the choice between income trusts and public corporations is supported in specification (3) where I control for the characteristics of the asset base. The coefficients on *Size, Age* and *Operating income* have the expected positive coefficient and are statistically significant. A one standard deviation increase in size increases the sample average probability that a firm will go public as an income trust by 6.2%; a one standard deviation increase in age increases the sample average probability by 10.6% and a one standard deviation increase in operating income increases the sample average probability by 8.7%. The *Aggregate Relative P/E ratio* is positive and significant and has the strongest impact on the choice between the income trust form and the corporate form. A one standard deviation increase in the aggregate relative P/E ratio increases the sample average probability that a firm will go public as an income trust by 17.1%. This effect is significant at the 1% level. This result supports the *market timing hypothesis.*

In specifications (4) and (5) of Table 3.5, I repeat the analysis using the *Industry relative P/E ratio* as a measure of market timing. In specification (4), the positive and significant coefficient on the *Industry relative P/E ratio* suggests that as the valuations for income trusts in a given industry increase relative to those of public corporations, so does the probability that a firm will go public as an income trust. A one standard deviation increase in the industry relative P/E ratio increases the sample average probability that a firm will go public as an income trust by

4.5%. This result is consistent with previous evidence on public corporations IPOs (Pagano, Panetta and Zingales, 1998) and supports the *market timing hypothesis*. In specification (5), only *Age, Operating income* and *Industry relative P/E ratio* affect the probability that a firm will go public as an income trust. A one standard deviation increase in age increases the sample average probability that a firm will go public as an income trust by 9.9%, a one standard deviation in profitability by 7.4%, and a one deviation increase in the industry relative P/E by 6.5%. Although the coefficient on the cash outflow to assets ratio has the expected sign, it is not statistically significant.

Specifications (1) through (5) are estimated including industry dummies to test whether firms going public as income trusts belong to specific industries. In all the specifications, the dummy variables corresponding to the Transportation and telecommunication and the Retail trade industries are significant. This suggests that firms in these two industries are more likely to go public as income trusts. The finding that firms in Transportation and telecommunication are more likely to go public as income trusts could be related to the inclusion of several firms operating in the pipeline business. Pipelines are an example of passive business, which the literature predicts to be suitable for payout intensive forms.

3.5. Fit and Unfit Choices of Organizational Form

In this section, I compare firm characteristics, market timing incentives and costs of going public for firms that choose an organizational form that fits their asset base and for firms that choose an organizational form that appears to be unfit for their asset base. The aim is to investigate whether unfit choices lead to higher costs of going public.

In order to estimate the marginal impact of choice on initial underpricing and underwriting fees, and ultimately on the proceeds of the IPO, I control for factors that affect the choice of organizational form using propensity scoring. This methodology allows comparing firms that, based on their asset base characteristics, should have chosen a given organizational form and that did make that choice ('fit' choice), with firms that should have chosen a given organizational form, but chose the other one ('unfit' choice).

3.5.1. Propensity Scoring

An established practice in financial and economics research to evaluate the effectiveness of a treatment is using dummy variables to classify a sample of observations into two groups: treated and controls. If it is possible to identify a random control group, the effectiveness of the treatment can be evaluated by comparing the two groups using standard OLS techniques. If it is not possible to identify a random control group to test the effectiveness of the treatment, because the same factors that affect whether the treatment will be effective also affect an individual's choice of whether to be treated, the use of OLS techniques would lead to biased coefficients.

Propensity scoring (Dewenter, Kim, Lim and Novaes, 2006; Rosembaum and Rubin, 1983, 1984) is one such method that can be used to identify a random control group. In this study, the treatment being evaluated is the effect of market valuations on the choice of organizational form. Firms that become income trusts even though this organizational form did not fit their characteristics are the treated group. Firms that become public corporations as this organizational form did fit their characteristics are the control group.

Propensity scoring requires matching firms that become income trusts with firms that become public corporations that are as alike as possible based on observable factors, in this case the characteristics of the asset base. The assumption is that firms whose asset base presents similar characteristics should choose the same organizational form. Matching based on the characteristics of the asset base removes the self-selection problem (Heckman, 1979) as it ensures that different choices made by firms with similar characteristics are only due to the differential in market valuations between organizational forms.

Rosembaum and Rubin (1983, 1984) provide mathematical proof that the probability of making a particular choice (e.g. income trust) given a set of observable factors (e.g. characteristics of the asset base) can be used to match firms. Dewenter et al. (2006) use propensity scoring to link the decision to list on a stock exchange (choice) to a set of firm and governance characteristics (observable factors). The first step to implement propensity scoring is to run a probit model to estimate the probability that a firm will become an income trust given the characteristics of its asset base. I use specification (1) in Table 3.5, which estimates the probability that a firm will go public as an income trust based on its size, age, cash outflow and profitability. I then rank the propensities and choose a 50% probability cut-off for low/ high propensity to become an income trust given a firm's asset base. This cut-off is chosen as it is more likely to disprove my hypothesis being a conservative cut-off.

Figure 3.2 illustrates how fit and unfit choices of organizational form are identified. Firms with a propensity score greater than 50% which choose to become income trusts are defined as 'fit income trusts'. Firms with a propensity score greater than 50% which choose to become public corporations are defined as 'unfit public corporations'. By contrast, firms with a propensity score lower than 50% which choose to become public corporations are defined as 'fit public corporations'. Lastly, firms with a propensity score lower than 50% which choose to become income trusts are defined as 'unfit income trusts'.

3.5. 2. Fit vs. Unfit Choices

I compare firm characteristics for 'fit income trusts' and 'unfit income trusts' in Panel A of Table 3.6. As expected, 'fit income trusts' are larger in size than 'unfit income trusts' (18.78 and 18.81 vs. 18.23 and 18.26). The difference in age is more striking: the mean (median) for 'fit income trusts' is 27 (24.5) years, vs. a mean (median) of 5 (4) years for 'unfit income trusts'. The median cash outflow to assets ratio for 'fit income trusts' is significantly larger than the median for 'unfit income trusts' (0.10 vs. 0.09), suggesting that unfit income trusts use a higher fraction of their operating cash flows for investment. Mean and median operating income, equal to 0.20 and 0.17 respectively, are significantly larger than the corresponding figures for unfit income trusts, equal to 0.12 and 0.11. These results are in contrast with the predictions of the free cash flow theory. As expected, the standard deviation of stock returns is lower for 'fit income trusts', a signal that they are characterized by lower ex-ante valuation uncertainty.

Panel B of Table 3.6 compares firm characteristics of fit and unfit public corporations. 'Unfit public corporations' are larger in size than 'fit public corporations' (19.53 and 19.12 vs. 17.23 and 17.48). Similarly, 'unfit public corporations' are older than 'fit public corporations' (21 and 17 years vs. 5.2 and 4 years). Unfit public corporations use a significantly lower fraction of operating cash flows for investment. The mean (median) 'unfit public corporation' has cash outflow to assets of 0.20 (0.06) vs. -0.27 (-0.12) for 'fit public corporations' and is relatively more profitable. The median operating income to assets ratio for 'unfit public corporations' is 0.18 vs. 0.04 for 'fit public corporations'. 'Fit public corporations' are characterized by a higher standard deviation of stock returns (Ritter, 1984; 1987), a signal that they are exposed to higher ex-ante valuation uncertainty than 'unfit public corporations'. At a broad level, these results are puzzling in the context of the free cash flow theory and the fit argument, which predicts that firms with the characteristics of 'unfit public corporations' should adopt payout-intensive organizational forms. 'Unfit public corporations' fit the description of the ideal candidates for adopting alternative organizational forms as well as or even better than the actual 'fit income trusts'.

I am also interested in comparing relative market valuations and offering costs for fit and unfit adopters of an organizational form. Panel A of Table 3.7 compares the *Aggregate P/E ratio* and the costs of going public for 'fit income trusts' and 'unfit income trusts'. The average (median) 'unfit income trust' goes public when the valuations for income trusts in the market are 27% (28%) higher than those of public corporations. The average (median) 'fit income trust' goes public when the valuations for income trusts in the market are 31% (30%) higher than those of public corporations. The high values of the *Aggregate P/E ratio* suggest that both types of firms choose the income trust form when the valuation premium form is more pronounced.

The median initial return experienced by 'unfit income trusts' (0.4%) and by 'fit income trusts' (0.30%) is comparable, a signal that the market is not able to distinguish one from the other on the first day of trading. However, the higher underwriting fees paid by 'unfit income trusts' reveal that underwriters can distinguish high propensity firms from low propensity firms. The higher underwriting fees also serve as some indirect evidence that the propensity scoring is robust, as one would expect underwriters to charge more from risky (or unfit) firms. This result, coupled with the evidence that income trust IPOs are more likely to be underwritten by reputable underwriters, is consistent with more reputable banks charging higher fees to 'unfit income trusts' to protect their reputational capital (Beatty and Ritter, 1986).

Panel B of Table 3.7 compares the relative market valuations of 'fit public corporations' and 'unfit public corporations.' The difference in the mean and median *Aggregate P/E ratio* for 'fit public corporations' and 'unfit public corporations' is not significant. The average 'unfit public corporation' chooses to become a public corporation despite the valuation premium of 17% to income trusts. The average 'unfit public corporation' exhibits greater initial underpricing than the average 'fit public corporation' (13.49% vs. 5.43%) but in turn pays lower underwriting fees (5.67% vs. 6.06%). One possible reason is that underwriters consider these IPOs as less risky, due to their asset base that makes them more similar to ideal candidates for the more transparent organizational form of income trust. Once again, investors do not seem to be able to distinguish these firms from 'fit public corporations' on the first day of trading based on their characteristics.

3.5.3. Fit Public Corporations vs. Unfit Income Trusts

In order to obtain more conclusive evidence that market valuations affect the choice of organizational form through the firms' objective to maximize the proceeds of the offer, I compare 'fit public corporations' and 'unfit income trusts'. In order to enhance the comparability of the firms in the two groups, I pair matched 'fit public corporations' and 'unfit income trusts'. That is, I pair-match each fit public corporation with the nearest neighbour among the unfit income trusts which are in common support (Dewenter et al. 2006). This procedure leads to 51 pairs.

I compare firm characteristics, aggregate valuations, and costs of going public for these 51 pairs. The results of these comparisons are presented in Table 3.8. The average (median) size for 'unfit income trusts' and 'fit public corporations' is comparable (18.31 and 18.32 vs. 18.10 and 18.26). The age of firms in these two groups is undistinguishable and much lower than the age of 'fit income trusts' and 'unfit public corporations' reported in Table 3.6.

Although the average *Cash Outflow* and *Profitability* of 'unfit income trusts' appears comparable with the average for 'fit public corporations', the difference in the medians reveals that 'unfit income trusts' use a lower fraction of operating cash flows to finance investment. The aftermarket standard deviation for 'unfit income trusts' is lower than the corresponding value for 'fit public corporations' (1.29 and 1.14 vs. 3.06 and 2.42). One possible explanation is that income trust units are likely purchased at the IPO and held in RRSPs and are therefore subject to a lower extent of fluctuations in the aftermarket.

The average (median) 'unfit income trust' goes public when the valuations for income trusts in the market are 27% (28%) higher than those of public corporations. The average (median) 'fit public corporation' goes public when the valuation premium attributed to income trusts in the market is 17% (20%), while the average (median) 'unfit income trust' goes public when the valuation premium attributed to income trusts is 27% (28%). This result appears consistent with the hypothesis that 'unfit income trusts' adopt the income trust form to take advantage of the valuation premium for income trusts in the market. 'Unfit income trusts' face lower underpricing than 'fit public corporations' (2.22% and 0.60% vs. 3.70% and 0.00% respectively), although the difference is not statistically significant. 'Unfit income trusts' pay lower underwriter fees (5.85% and 6.00% vs. 5.94% and 6.00% respectively). A possible explanation for the lower underwriter fees charged to 'unfit income trusts' is that the higher demand in the market for income trusts reduces the risk that the offer might be undersubscribed (Ang and Brau, 2002).

It appears that 'unfit income trusts' go public in periods when the valuations of income trusts are relatively high. Making choices based on market timing leads to similar underpricing and lower underwriter fees as opposed to making choices based on fit. Firms trade off between fit and market timing to maximize the benefits of market timing versus the long-term costs of making unfit choices.

In order to further assess the robustness of these results, I conducted three separate sets of tests. First, I repeated the comparison between the full sample of 'fit public corporations' and the full sample of 'unfit income trusts' without pair-matching. I find that 'unfit income trusts' earn lower underpricing than 'fit public corporations' and that the relative market valuations are higher for 'unfit income trusts'. Second, I repeated the analysis by identifying low propensity firms as those with a propensity score below the average (48.95%), but this procedure yields similar results. And third, I pair-matched 'fit public corporations' and 'unfit income trusts' based on a more selective matching criteria using a more conservative propensity score of 40% as opposed to 50%. This sampling leads to 24 pairs. The comparison of the costs of going public for these 24 pairs is presented in Table 3.8.

The size and age of 'unfit income trusts' appears comparable with the corresponding figures for 'fit public corporations.' 'Unfit income trusts' use a lower fraction of their operating cash flows to fund investment and face lower ex-ante uncertainty than 'fit public corporations'. Underwriting fees and initial underpricing experienced by 'unfit income trusts' are comparable to those experienced by 'fit public corporations' and market valuations for 'unfit income trusts' are significantly higher than those for 'fit public corporations.' Overall, based on these results one can conclude that the gains from market timing do not appear to be offset by higher costs of going public.

3. 6. Robustness tests

One could argue that using the ratio between the average P/E for income trusts and the average P/E for public corporations calculated 15 days prior to the announcement as a measure of market timing does not leave much time to IPO firms to respond to higher valuations for income trusts in the market.

As previous studies show that the registration period for IPOs is, on average, two months (Lowry and Schwert 2003, 2004), it appears safe to assume that a firm should be able to switch to another organizational form at any time over this period. In order to test the robustness of the evidence on the *market timing hypothesis*, I re-estimated the choice model calculating the measures of market timing -- *Aggregate P/E ratio* and *Industry P/E ratio* -- 30 days and 60 days respectively prior to the announcement of the IPO. Overall, this does not change the results. The *Aggregate P/E ratio* has the expected positive sign and is significant in all specifications. The *Industry P/E ratio* has positive sign in all specifications and is significant at 5% and 10% respectively. Overall, this evidence provides strong support to the hypothesis that firms are more likely to become income trusts when relative market valuations of income trusts are higher than those of corporations.

Another possible concern is that the specification of the market timing variables as ratios between the level of valuations of income trusts and those of public corporations could cancel out general market conditions. That is, the choice of the income trust form could be a response to low valuations for public corporations, rather than an independent response to high valuations for income trusts. To investigate this possibility, I re-estimate the choice model using P/E levels for income trusts and public corporations rather than their ratio.

Specifications (1) and (2) of Table 3.10 are estimated substituting the *Aggregate P/E ratio* with two measures, the *Aggregate P/E of income trust IPOs* and the *Aggregate P/E of corporation IPOs*. Specification 1 tests the *market timing hypothesis* in a univariate setting. The coefficient on the *Aggregate P/E of income trust IPOs* has the expected positive sign and is significant, suggesting that firms are more likely to go public as income trusts in periods when market valuations for income trusts are relatively high. The coefficient on the *Aggregate P/E of corporation IPOs* has the expected negative sign and is significant, suggesting that firms are less likely to go public as income trusts during periods when market valuations for public corporations are relatively high. In the multivariate specification, the coefficient on the *Aggregate P/E of income trust IPOs* is positive and significant, while the coefficient on the *Aggregate P/E of corporation IPOs* is negative and significant, supporting the market timing hypothesis.

Specifications (3) and (4) are estimated substituting the *Industry P/E ratio* with two measures, the *Industry P/E of income trust IPOs* and the *Industry P/E of corporation IPOs*. In both specifications, the coefficient on the *Industry P/E for corporation IPOs* has the expected negative sign and is significant, while the coefficient on the *Industry P/E for income trust IPOs* is negative and not significant. These results support the *market timing hypothesis* and suggest that the choice between the income trust and the corporate form is driven by firms' attempts to time the market by choosing the form that receives higher valuations.

Some previous studies proposing that firms time the market when making choices use the market to book ratio to capture market timing incentives (Baker and Wurgler, 2002, 2004). For example, Baker and Wurgler (2004) argue that firms are more likely to become dividend payers when the market attributes a premium to dividend paying firms and express this premium as the difference between the book to market of payers and non-payers. I test the robustness of the evidence on the *market timing hypothesis* obtained using the P/E ratio by re-estimating the choice model using the *Industry relative market to book (M/B) ratio* to capture the effect of periods when income trusts are valued higher than corporations in a given industry and the *Aggregate relative M/B ratio* to capture the effect of periods when income trusts are valued higher than corporations in the entire market. Firms with negative book values are excluded for the calculation of the market timing variables as they would imply negative M/B ratios. I am able to match 248 firms with the corresponding value of the *Aggregate relative M/B ratio* and 232 firms with the corresponding value of the *Industry relative M/B ratio*.

Specifications (1) and (2) in Table 3.11 use the *Aggregate relative M/B ratio* as a measure of market timing. In specification (1) the coefficient on the *Aggregate relative M/B ratio* has the expected positive sign and is significant. This suggests that firms are more likely to go public as income trusts when the ratio between the M/B of income trusts and the M/B of public corporations in the market is relatively high, and ultimately supports the *market timing hypothesis*. A one standard deviation increase in the aggregate relative M/B ratio increases the sample average probability that a firm will go public as an income trust by 14.7%. This evidence survives in the specification (2), which supports both the *asset base hypothesis* and the *market timing hypothesis*. *Age, profitability* and *aggregate relative M/B ratio* have the strongest effects on the probability that a firm will go public as an income trust. A one standard deviation increase in age increases the sample average probability that a firm will go public as an income trust by 10.2%, a one standard deviation increase in profitability increases the sample average probability by 11.2% and one standard deviation increase in the aggregate relative M/B ratio increases the sample average probability by 12.7%.

Specifications (3) and (4) in Table 3.11 use the *Industry relative M/B ratio* as a measure of market timing. In specification (3), the coefficient on the *Industry relative M/B ratio* is positive and significant, suggesting that the relative valuations of income trusts and public corporations within an industry affect a firm's choice of organizational form. A one standard deviation increase in the industry relative M/B ratio increases the sample average probability that a firm will go public as an income trust by 13%. In specification (4), *Age* and *Operating income* and *Industry relative M/B ratio* affect the probability that IPO firms will become income trusts. A one standard deviation increase in age increases the sample average probability that a firm will go public as an income trust by 11.6%, a one standard deviation increase in profitability increases the sample average probability by 10.81%, and a one standard deviation increase in the industry relative M/B ratio by 13.23%.

Specifications (1) through (4) are estimated including industry dummies. In all the specifications, the dummy variables corresponding to the Transportation and telecommunication industry and the Retail trade industry are positive and significant. This finding suggests that firms in these two industries are more likely to go public as income trusts. Overall, the evidence obtained using the M/B ratio provides strong evidence that firms become income trusts when valuations of income trusts compared to public corporations are relatively high.

3.7. Conclusion

In this essay I have investigated the role and short-term consequences of market timing on the choice of organizational form. I proposed that choice of organizational form is a trade-off between the fit with the asset base of a firm and the benefits of market timing accrued through lower short-term costs of going public despite a lack of fit. I find that both fit and market timing influence the choice of organizational form. Market driven choices are associated with lower initial underpricing and lower underwriter fees despite the lack of fit of a firm's asset base with the highly valued organizational form.

I find that firms are more likely to adopt the income trust form when market valuations for income trusts are higher than those of public corporations. I also document results consistent with previous empirical evidence on payout intensive organizational forms similar to income trusts (Ciccotello and Muscarella, 1997). Firms that choose the income trust form are generally larger and older, and they are subject to a low extent of valuation uncertainty at the offering.

The results presented in this essay extend previous evidence that firms are aware of the level of valuations for their industry peers when going public (Pagano, Panetta and Zingales, 1998) and time the market when issuing shares (Baker and Wurgler, 2000; Lowry, 2003) by showing that market timing affect also a firm's choice among alternative organizational forms.

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Table 3.1: Summary Statistics for Lead Underwriters.

The table presents summary statistics for various measures of market share for lead underwriters in the sample. The sample consists of 272 firm-commitment IPOs between January 1995 and December 2005. Market share is calculated in net terms. In case of IPOs co-managed by two or more underwriters, each of them is given full credit for the IPO. The measures of market share presented in the Table are defined as in Fang (2005). *Total amount* is defined as the aggregate gross proceeds managed or co-managed by each underwriter. *Market share in amount* is calculated as the ratio of the total amount managed or co-managed by each underwriter and the aggregate amount managed by all the underwriters. *Market share in deals* is calculated as the ratio of the number of deals managed or co-managed by each underwriter and the total number of deals. Lead underwriters are obtained from Financial Post New Issue Database and checked with Factiva.

Lead underwriter	Total amount (million CAD$)	Total deals	Market share in Amount	Market share in Deals
CIBC	14,147	80	0.255	0.211
RBC	11,253	71	0.203	0.187
Scotia Capital	9,596	49	0.173	0.129
BMO	5,857	50	0.105	0.132
TD Securities	2,373	2	0.043	0.005
Morgan Stanley & Co.	2,060	3	0.037	0.008
National Bank Financial	1,873	18	0.034	0.047
Merrill Lynch & Co.	1,820	6	0.033	0.016
Goldman Sachs & Co.	1,130	6	0.020	0.016
Midland Walwyn	852	19	0.015	0.050
Goepel, Shields & Partners	471	2	0.008	0.005
Genuity Capital Markets	446	3	0.008	0.008
First Marathon Securities	343	4	0.006	0.011
HSBC	312	5	0.006	0.013
Levesque Beaubien Geoffrion	295	4	0.005	0.011
Wit Soundview	269	1	0.005	0.003
Peters & Co	263	4	0.005	0.011
Griffiths McBurney & Partners	235	5	0.004	0.013
Research Capital	230	3	0.004	0.008
Gordon Capital	195	3	0.004	0.008
Newcrest Capital	176	3	0.003	0.008

FirstEnergy Capital	154	1	0.003	0.003
GMP Securities Ltd.	145	4	0.003	0.011
Yorkton Securities	133	3	0.002	0.008
Salomon Smith Barney	128	2	0.002	0.005
Canaccord Capital	119	9	0.002	0.024
Citigroup	106	2	0.002	0.005
Sprott Securities	84	1	0.002	0.003
CSFB	77	1	0.001	0.003
Richardson Greenshields	76	6	0.001	0.016
Loewen, Ondaatje, McCutcheon	72	1	0.001	0.003
Evolution Securities	69	1	0.001	0.003
Westwind Partners	52	2	0.001	0.005
Orion Securities	45	2	0.001	0.005
Dundee Securities	35	1	0.001	0.003
Bear, Stearns & Co.	30	1	0.001	0.003
Marleau, Lemire Securities	15	1	0.000	0.003
Salman Partners	13	1	0.000	0.003

Table 3.2: Summary statistics: 1995-2005.

This table reports descriptive statistics for income trust IPOs and public corporation IPOs. *Panel A* presents the distribution of income trust and public corporation IPOs by year. Columns 1-2 present the number and percentage of income trust IPOs relative to the total number of IPOs in every year. Columns 3-4 present the number and percentage of public corporation IPOs relative to the total number of IPOs in every year. *Panel B* presents the distribution of income trust and public corporation IPOs by industry. Columns 1-2 present the number of income trust IPOs by industry and the percentage of income trust IPOs relative to the total number of IPOs in the industry. The industry classification are based on the first two digits of the SIC code as classified by S&P (Wu and Kwok, 2002). Columns 3-4 present number of public corporation IPOs by industry and percentage of public corporation IPOs relative to the total number of IPOs in the industry. *Panel C* the distribution of aggregate gross proceeds for income trust and public corporation IPOs by industry. *Panel D* presents the distribution of income trusts and public corporation IPOs by age. Age is measured as the number of years between the date of start of operations and announcement date. The date of start of operations is obtained from the offering prospectus available from SEDAR. The announcement date is obtained from Financial Post New Issue database.

Panel A: Number and Percentage by Year

	Income Trust IPOs		Public Corporation IPOs	
1995	1	10.0%	9	90.0%
1996	14	42.0%	19	58.0%
1997	23	66.0%	12	34.0%
1998	3	20.0%	12	80.0%
1999	1	8.0%	12	92.0%
2000	0	0.0%	19	100.0%
2001	9	69.0%	4	31.0%
2002	28	90.0%	3	10.0%
2003	18	75.0%	6	25.0%
2004	23	59.0%	16	41.0%
2005	24	60.0%	16	40.0%

Panel B: Number and Percentage by Industry

	Income Trust IPOs		Public Corporation IPOs	
Mining & Energy	23	50.0%	23	50.0%
Manufacturing	35	42.0%	49	58.0%
Transp./ Communication	35	76.0%	11	24.0%
Wholesale	4	67.0%	2	33.0%
Retail trade	17	81.0%	4	19.0%
Real estate	15	47.0%	17	53.0%
Services	15	41.0%	22	59.0%

Table 3.2 continued:

Panel C: Aggregate Proceeds by Industry (Million CAD$)

	Income Trust IPOs		Public Corporation IPOs	
Mining & Energy	4279.1	61.0%	2772.9	39.0%
Manufacturing	6024.6	66.0%	3041.3	34.0%
Transp./ Communication	5718.1	60.0%	3835.5	40.0%
Wholesale	384.7	87.0%	55.1	13.0%
Retail trade	1838.8	70.0%	795.2	30.0%
Real estate	1940.1	31.0%	4248.0	69.0%
Services	2689.4	73.0%	996.5	27.0%

Panel D: Number and % by Age (Years)

	Income Trust IPOs		Public Corporation IPOs	
(0:5)	35	39.0%	55	61.0%
(5; 10)	18	33.0%	36	67.0%
(10; 20)	28	60.0%	19	40.0%
(20; 40)	33	77.0%	10	23.0%
(40; 60)	15	79.0%	4	21.0%
>60	3	43.0%	4	57.0%

Table 3.3: Firm and Offer Characteristics

The table reports summary statistics on various firm and offer characteristics for income trust IPOs and public corporation IPOs. *Size* of a firm is measured as the natural logarithm of the book value of total assets (in million CAD$). *Age* is the number of years between the year of start of operations and the year of the announcement of the IPO. *Cash holding* is the sum of cash and cash equivalents held by a firm (in million CAD$). *Cash outflow to Assets ratio* is the sum of operating and investing cash flow deflated by the book value of total assets. *Operating income/ Assets* is the ratio of operating income and the book value of total assets (Jain and Kini, 1994). *Aftermarket standard deviation* is the standard deviation of daily returns in the 60 days of trading starting the day after the offer (Ritter, 1984; 1987). *Issue price* is the offer price reported in the offering prospectus. *Gross proceeds* are calculated as issue price times number of shares offered, excluding the over allotment option. *Secondary component* is the percentage of the shares offered in the IPO which is sold by the existing shareholders. *Capital raised* is the amount raised by the firm at the IPO and it is measured as the difference between gross proceeds of the IPO and the value of the secondary component. *Underwriter reputation* is a binary variable that measures the prestige of the underwriter(s) of the IPO. a, b and c indicate significance at 10%, 5% and 1% level respectively.

	Income trust IPOs		Public Corporation IPOs		*p-value*
Size					
Mean	127	18.55	121	17.97	0.007
First quartile	127	18.00	121	16.59	
Median	127	18.45	121	17.75	0.000
Third quartile	127	19.00	121	18.97	
Age (years)					
Mean	127	18.38	121	10.31	0.000
First quartile	127	5.00	121	2.000	
Median	127	13.00	121	5.000	0.000
Third quartile	127	28.00	121	13.00	
Cash holding (million CAD$)					
Mean	127	7.81	121	53.89	0.155
First quartile	127	0.00	121	0.45	
Median	127	1.40	121	3.38	0.002
Third quartile	127	5.12	121	22.54	
Cash outflow/ Assets					
Mean	127	-0.01	121	-0.12	0.455
First quartile	127	-0.02	121	-0.24	
Median	127	0.10	121	-0.02	0.000
Third quartile	127	0.19	121	0.13	
Operating income/ Assets					
Mean	127	0.17	121	0.03	0.002
First quartile	127	0.07	121	-0.04	
Median	127	0.14	121	0.07	0.000
Third quartile	127	0.21	121	0.18	

Aftermarket standard deviation (%)					
Mean	127	1.19	121	3.30	0.000
First quartile	127	0.86	121	2.04	
Median	127	1.03	121	2.65	0.000
Third quartile	127	1.36	121	4.06	
Issue Price					
Mean	127	10.16	121	11.30	0.066
First quartile	127	10.00	121	7.00	
Median	127	10.00	121	10.25	0.230
Third quartile	127	10.00	121	10.00	
Gross Proceeds					
Mean	127	150.49	121	127.76	0.407
First quartile	127	73.80	121	105.10	
Median	127	129.00	121	50.00	0.000
Third quartile	127	180.00	121	16.80	
Secondary component (%)					
Mean	126	49.57	120	14.54	0.009
First quartile	126	0.00	120	0.00	
Median	126	19.50	120	0.00	0.000
Third quartile	126	100.00	120	21.20	
Capital raised					
Mean	127	78.86	127	82.43	0.821
First quartile	127	0.00	127	22.00	
Median	127	24.14	127	40.00	0.009
Third quartile	127	150.00	127	76.00	
Underwriter reputation					
Mean	127	0.93	127	0.69	0.000
First quartile	127	.	127	.	
Median	127	1.00	127	1.00	.
Third quartile	127	.	127	.	

Table 3.4: Relative Valuations and Offering Costs.

The table reports summary statistics on market valuations and offering costs for income trust IPOs and public corporation IPOs. Relative valuations for income trusts and public corporations are calculated at the industry and aggregate market level. *Industry relative P/E ratio* is the ratio between average industry P/E ratio for income trusts and average industry P/E ratio for public corporations two weeks prior to the offering. *Aggregate relative P/E ratio* is the ratio between average P/E ratio for income trusts trading on the market and average P/E ratio for public corporations trading in the market two week prior to the offering. *Underwriting fee* is the percentage of the gross proceeds of the offer paid as compensation to the underwriter. *Initial underpricing* is the market price on the offering day divided by the offering price minus one. Earnings per share (unit) are from Report on Business (ROB) Database.

	Income trust IPOs		Public corporation IPOs		*p-value*
Industry Relative P/E ratio[18]					
Mean	121	1.25	98	1.15	0.054
First quartile	121	0.97	98	0.91	
Median	121	1.21	98	1.14	0.033
Third quartile	121	1.49	98	1.34	
Aggregate Relative P/E ratio[19]					
Mean	127	1.29	121	1.15	0.000
First quartile	127	1.16	121	1.00	
Median	127	1.30	121	1.17	0.000
Third quartile	127	1.43	121	1.28	
Underwriting Fees (%)					
Mean	127	5.76	121	5.93	0.015
First quartile	127	5.50	121	5.50	
Median	127	6.00	121	6.00	0.000
Third quartile	127	6.00	121	6.50	
Initial Underpricing (%)					
Mean	127	1.05	121	8.03	0.005
First quartile	127	-1.00	121	-0.82	
Median	127	0.30	121	2.67	0.010
Third quartile	127	5.30	121	12.00	

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[18] Mean and median values are significantly different from 1 at 10% and 5% respectively.
[19] Mean and median values are significantly different from 1 at 1% level.

Table 3.5: Choice of Organizational Form

The table presents the relationship between the decision to go public as an income trust and several firm and market characteristics. I estimate several probit models in which the choice of organizational form is measured as a dichotomous variable taking value 1 if a firm goes public as an income trust and 0 if the firm goes public as a public corporation. *Size* is the natural logarithm of total assets in million CAD$. *Age* is number of years between start of operations and IPO. *Cash outflow to Assets ratio* is calculated as the sum of operating and investing cash flow deflated by the book value of total assets. *Operating income/ Assets* is the ratio of operating income and the book value of total assets (Jain and Kini, 1994). *Industry relative P/E ratio* is calculated as the ratio between the average P/E ratio for income trusts and the average P/E ratio for public corporations in a given industry two weeks prior to the offering. *Aggregate relative P/E* is defined as the ratio between the average P/E ratio for income trusts and the average P/E ratio for public corporations trading in the market two weeks prior to the offering. Standard errors are in parentheses. Pseudo-R^2 is calculated as $1-[\ln L(\Omega)/\ln L(\omega)]$ where $L(\omega)$ is the likelihood function under the null hypothesis that the coefficients are zero, and $L(\Omega)$ is the likelihood function evaluated using the estimated coefficients. a, b and c indicate significance at the 10% level, 5% level and 1% level respectively.

	(1)	(2)	(3)	(4)	(5)
Intercept	-2.120^{b}	-2.861^{c}	-4.866^{c}	-0.387	-1.776
	(0.96)	(0.55)	(1.15)	(0.29)	(1.10)
Size	0.098^{a}		0.100^{a}		0.053
	(0.05)		(0.05)		(0.06)
Age	0.017^{c}		0.016^{c}		0.025^{c}
	(0.00)		(0.00)		(0.01)
Cash outflow/Assets	-0.051		-0.099		-0.069
	(0.08)		(0.08)		(0.14)
Operating income/ Assets	0.800^{b}		0.641^{a}		0.822^{b}
	(0.34)		(0.35)		(0.35)
Industry relative P/E				0.434^{a}	0.419^{a}
				(0.23)	(0.24)
Aggregate relative P/E		2.363^{c}	2.246^{c}		
		(0.44)	(0.48)		
Pseudo-R^2	10.75%	11.68%	19.11%	1.66%	14.20%
Correctly predicted (%)	51.8	51.2	53.8	55.5	54.8
Observations	248	248	248	220	220

Table 3.6: Firm and Offer Characteristics for Fit and Unfit Choices.

The table reports summary statistics on various firm characteristics for fit versus unfit choices. Fit (unfit) income trusts are firms with high (low) propensity of becoming an income trust which become income trust. Fit (unfit) public corporations are firms with low (high) propensity of becoming an income trust which choose to become public corporation. A firm is defined as having low (high) propensity to adopt the income trust form if its propensity score is below (above) 50%.

Panel A: Fit and Unfit Income Trusts

	Obs.	Fit Income trusts	Obs.	Unfit Income Trusts	*p-value*
Size					
Mean	76	18.78	51	18.23	0.012
Median	76	18.81	51	18.26	0.017
Age					
Mean	76	27.30	51	5.08	0.000
Median	76	24.50	51	4.00	0.000
Cash-outflow/Assets					
Mean	76	-0.06	50	0.05	0.599
Median	76	0.10	50	0.09	0.071
Operating income/ Assets					
Mean	76	0.20	51	0.12	0.001
Median	76	0.17	51	0.11	0.001
Aftermarket S.D. (%)					
Mean	76	1.11	51	1.29	0.056
Median	76	1.00	51	1.14	0.019

Panel B: Fit and Unfit Public Corporations

	Obs.	Fit Public corporations	Obs.	Unfit Public corporations	*p-value*
Size					
Mean	82	17.23	39	19.53	0.000
Median	82	17.48	39	19.12	0.000
Age					
Mean	82	5.21	39	21.05	0.000
Median	82	4.00	39	17.00	0.000
Cash-outflow/ Assets					
Mean	82	-0.27	39	0.20	0.000
Median	82	-0.12	39	0.06	0.000
Operating income/ Assets					
Mean	82	-0.09	39	0.28	0.000
Median	82	0.04	39	0.18	0.000
Aftermarket S.D. (%)					
Mean	82	3.55	39	2.77	0.019
Median	82	2.87	39	2.33	0.022

Table 3.7: Valuations and Costs of Going Public for Fit and Unfit Choices.

The table reports summary statistics on market valuations and costs of going public for fit versus unfit choices. Fit (unfit) income trusts are firms with high (low) propensity of becoming an income trust which become income trusts. Fit (unfit) public corporations are firms with low (high) propensity of becoming income trusts which choose to become public corporation. A firm is defined as having low (high) propensity to adopt the income trust form if its propensity score is below (above) 50%.

Panel A: Fit and Unfit Income Trusts

	Obs.	Fit Income Trusts	Obs.	Unfit Income Trusts	*p-value*
Aggregate PE ratio					
Mean	76	1.31	51	1.27	0.186
Median	76	1.30	51	1.28	0.127
Initial underpricing (%)					
Mean	76	0.40	51	2.01	0.331
Median	76	0.30	51	0.40	0.294
Underwriting fees (%)					
Mean	76	5.69	51	5.87	0.048
Median	76	6.00	51	6.00	0.050

Panel B: Fit and Unfit Public Corporations

	Obs.	Fit Public Corporations	Obs.	Unfit Public Corporations	*p-value*
Aggregate PE ratio					
Mean	82	1.14	39	1.17	0.386
Median	82	1.16	39	1.17	0.273
Initial underpricing (%)					
Mean	82	5.43	39	13.49	0.097
Median	82	0.00	39	7.72	0.002
Underwriting fees (%)					
Mean	82	6.06	39	5.67	0.005
Median	82	6.00	39	6.00	0.010

Table 3.8: Offering Costs for Fit Corporations and Unfit Income Trusts.

The table reports summary statistics on firm characteristics, market valuations and costs of going public for fit public corporations and unfit income trust. Unfit income trusts are firms with low propensity of becoming an income trust which choose to become income trust. Fit public corporations are firms with low (high) propensity of becoming an income trust which choose to become public corporation. A firm is defined as having low (high) propensity to adopt the income trust form if its propensity score is below (above) 50%. Firms in each of the two groups are matched the nearest neighbour in the other group.

	Obs.	Fit Public Corporations	Obs.	Unfit Income Trusts	*p-value*
Size					
Mean	51	18.10	51	18.31	0.350
Median	51	18.26	51	18.32	0.187
Age					
Mean	51	5.31	51	5.15	0.854
Median	51	4.00	51	4.00	0.459
Cash-outflow/Assets					
Mean	51	-0.04	51	0.05	0.065
Median	51	-0.01	51	0.09	0.008
Operating income/ Assets					
Mean	51	0.10	51	0.12	0.488
Median	51	0.11	51	0.11	0.280
Aftermarket S.D.(%)					
Mean	51	3.06	51	1.29	0.000
Median	51	2.42	51	1.14	0.000
Aggregate PE					
Mean	51	1.17	51	1.27	0.008
Median	51	1.20	51	1.28	0.005
Initial underpricing (%)					
Mean	51	3.70	51	2.22	0.675
Median	51	0.00	51	0.60	0.464
Underwriting fees (%)					
Mean	51	5.94	51	5.85	0.311
Median	51	6.00	51	6.00	0.040

Table 3.9: Costs of Going Public for Fit Corporations and Unfit Income Trusts using a 40% Propensity Cut-off.

The table reports summary statistics on firm characteristics, market valuations and costs of going public for fit public corporations and unfit income trust. Unfit income trusts are firms with low propensity which become income trust. Fit public corporations are firms with low (high) propensity which become public corporation. A firm is defined as having low (high) propensity to adopt the income trust form if its propensity score is below (above) 40%. Firms in each of the two groups are matched the nearest neighbour in the other group.

	Obs.	Fit Public Corporations	Obs.	Unfit Income Trusts	*p-value*
Size					
Mean	24	17.79	24	17.84	0.875
Median	24	18.24	24	17.84	0.463
Age					
Mean	24	4.87	24	3.92	0.408
Median	24	3.00	24	3.00	0.332
Cash-outflow/Assets					
Mean	24	-0.19	24	0.00	0.165
Median	24	-0.07	24	0.09	0.014
Operating income/ Assets					
Mean	24	0.06	24	0.09	0.371
Median	24	0.07	24	0.09	0.169
Aftermarket S.D.(%)					
Mean	24	2.99	24	1.40	0.000
Median	24	2.52	24	1.14	0.000
Aggregate P/E					
Mean	24	1.13	24	1.24	0.037
Median	24	1.15	24	1.28	0.014
Initial underpricing (%)					
Mean	24	6.70	24	4.67	0.380
Median	24	3.33	24	1.58	0.351
Underwriting fees (%)					
Mean	24	5.969	24	5.944	0.854
Median	24	6.000	24	6.000	0.287

Table 3.10: Choice of Organizational Form: Price to Earning levels.

The table presents the relationship between the decision to go public as an income trust and several firm and market characteristics. I estimate several probit models in which the choice of organizational form is measured as a dummy variable taking value 1 if a firm goes public as an income trust and 0 if the firm goes public as a corporation. *Size* is the natural logarithm of assets of the firm in million CAD$. *Age* is number of years between start of operations and IPO. *Cash outflow to Assets ratio* is calculated as the sum of operating and investing cash flow deflated by the book value of total assets. *Operating income/ Assets* is the ratio of operating income and the book value of total assets (Jain and Kini, 1994). *Industry P/E corporation IPOs* is the average P/E ratio for public corporations, while *Industry P/E trust IPOs* is the average P/E ratio for income trusts in a given industry two weeks prior to the offering. *Aggregate* relative *P/E corporation IPOs* is the average P/E ratio for public corporations, while *Aggregate relative P/E trust IPOs* is the average P/E ratio for income trusts trading in the market two weeks prior to the offering. Standard errors are in parentheses. Pseudo-R^2 is calculated as $1-[\ln L(\Omega)/\ln L(\omega)]$ where $L(\omega)$ is the likelihood function under the null hypothesis that the coefficients are zero, and $L(\Omega)$ is the likelihood function evaluated using the estimated coefficients. a, b and c indicate significance at the 10% level, 5% level and 1% level respectively.

	(1)	(2)	(3)	(4)
Intercept	-0.217	-2.253^{a}	1.633^{c}	0.448
	(0.73)	(1.33)	(0.54)	(1.25)
Size		0.105^{a}		0.034^{b}
		(0.05)		(0.06)
Age		0.016^{c}		0.024^{c}
		(0.00)		(0.01)
Cash outflow/Assets		-0.101		-0.072
		(0.08)		(0.09)
Operating income/ Assets		0.684^{b}		0.869^{b}
		(0.34)		(0.34)
Industry P/E corporation IPOs			-0.035^{c}	-0.033^{c}
			(0.01)	(0.01)
Industry P/E trust IPOs			-0.000	0.000
			(0.01)	(0.01)
Aggregate P/E corporation IPOs	-0.062^{c}	-0.061^{c}		
	(0.01)	(0.02)		
Aggregate P/E trust IPOs	0.056^{c}	0.051^{c}		
	(0.01)	(0.01)		
Pseudo-R^2	10.29	18.46	4.69	16.31
Correctly predicted (%)	51.4	54.0	55.5	55.3
Observations	251	251	220	220

Table 3.11: Choice of Organizational Form: Market to Book ratio.

The table presents the relationship between the decision to go public as an income trust and several firm and market characteristics. I estimate several probit models in which the choice of organizational form is measured as a dummy variable taking value 1 if a firm goes public as an income trust and 0 if the firm goes public as a public corporation. *Size* is the natural logarithm of total assets in million CAD$. *Age* is number of years between start of operations and IPO. *Cash outflow to Assets ratio* is calculated as the sum of operating and investing cash flow deflated by the book value of total assets. *Operating income/ Assets* is the ratio of operating income and the book value of total assets (Jain and Kini, 1994). *Industry relative M/B ratio* is calculated as the ratio between the average M/B ratio for income trusts and the average M/B ratio for public corporations in a given industry two weeks prior to the offering. *Aggregate relative M/B* is defined as the ratio between the average M/B ratio for income trusts and the average M/B ratio for public corporations trading in the market two weeks prior to the offering. Standard errors are in parentheses. Pseudo-R^2 is calculated as $1-[\ln L(\Omega)/\ln L(\omega)]$ where $L(\omega)$ is the likelihood function under the null hypothesis that the coefficients are zero, and $L(\Omega)$ is the likelihood function evaluated using the estimated coefficients. a, b and c indicate significance at the 10% level, 5% level and 1% level respectively.

	(1)	(2)	(3)	(4)
Intercept	-2.149^c	-3.718^c	-0.869^c	-1.901^a
	(0.49)	(1.09)	(0.27)	(1.05)
Size		0.083		0.034
		(0.05)		(0.06)
Age		0.016^c		0.019^c
		(0.00)		(0.01)
Cash outflow/Assets		-0.092		-0.081
		(0.07)		(0.09)
Operating income/ Assets		0.825^b		0.810^b
		(0.35)		(0.35)
Industry relative M/B			1.384^c	1.405^c
			(0.37)	(0.39)
Aggregate relative M/B	3.433^c	2.954^c		
	(0.78)	(0.81)		
Pseudo-R^2	7.84	15.91	6.14	15.41
Correctly predicted (%)	51.2	53.6	53.9	55.0
Observations	248	248	232	232

Figure 3.1: Number of IPOs by Underwriter.

The figure presents the distribution of the IPOs managed and co-managed by each of the underwriters in my sample. The sample consists of 272 firm-commitment IPOs on the Toronto Stock Exchange between January 1995 and December 2005. Co-managed offerings are counted in net terms (Beatty and Ritter, 1986). Lead underwriter(s) are obtained from Financial Post New Issue Database and checked with Factiva.

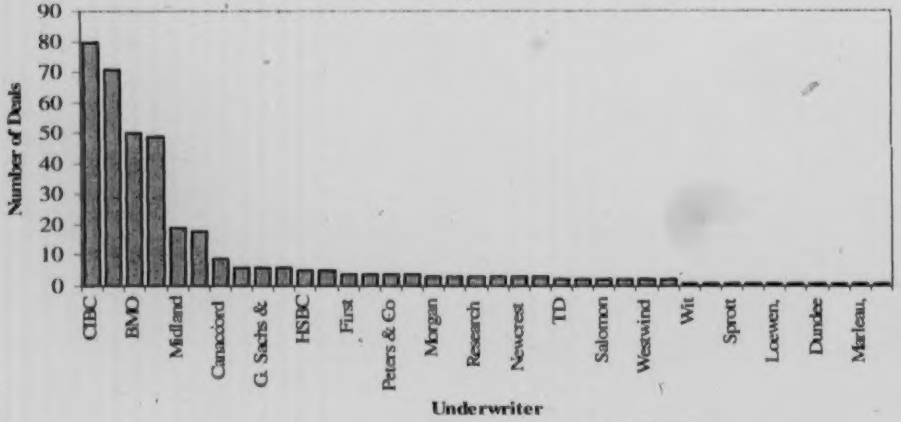

Figure 3.2: Fit and Unfit Choices of Organizational Form.

The figure illustrates the definition of fit and unfit choices of organizational form. The choice of the income trust form or the public corporation form are defined as fit or unfit based on a firm's propensity score and the choice made. A propensity score of 50% is chosen as the cut-off between low and high propensity. Firms with propensity score higher (lower) than 50% which choose to become income trusts are classified as 'fit income trusts' ('unfit income trusts'). Firms with propensity score higher (lower) than 50% which choose to become public corporations are classified as 'unfit public corporations' ('fit public corporations').

PROPENSITY SCORE	**CHOICE MADE**	
	INCOME TRUST	PUBLIC CORPORATION
HIGH	FIT INCOME TRUSTS	UNFIT PUBLIC CORPORATIONS
LOW	UNFIT INCOME TRUSTS	FIT PUBLIC CORPORATIONS

Chapter 4

Impact of Payout Policy and Asset Base Characteristics on Investment

4.1. Introduction

Over the period 1995 to 2005, income trusts have become the primary IPO vehicle in Canada. In this dissertation, I show that this phenomenon is due to firms taking advantage of the relatively higher valuations in the market for income trusts compared to corporations, and going public with the most highly valued form. Consistent with this finding, an article in *The Globe and Mail* observes that, as income trusts trade at higher valuations than public corporations, the income trust form is attractive also for high growth firms which would be a better fit for the corporate form[20].

On October 31st 2006, a day that has been defined the 'black Tuesday' of income trusts, Finance Minister Mr. Jim Flaherty announced a proposed legislation aimed at reducing the number of income trusts. Among the reasons given by the Finance Minister to motivate the decision was the concern that, given their high payouts, income trusts are a better fit for mature firms that do not need to use retained earnings to grow than for the typical firm at the IPO stage. The mismatch between payout policy and growth opportunities of newly listed firms that become income trusts could have potentially serious consequences for their long-term growth and, given the extent of diffusion of income trusts in Canada, for the long-term growth of the entire economy. Similar concerns have often been raised in the press. An article in *The Toronto Star* observes that as income trusts essentially convert capital that could be used for investment into income that is distributed to investors, the diffusion of income trust in Canada does not "do anything for the long-term reinvestment of the country[21]."

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[20] "*Who do you trust will be a trust? CI's move opens speculation on who is next; so far, AGF's a maybe, IGM a no*", *The Globe and Mail*, 28 March 2006.

In this paper, I provide evidence on the effect of the income trust form on the capital expansion paths of newly listed firms. The question regarding the impact of a payout-intensive organizational form on investment and growth of newly listed firms goes to the very essence of the relationship between payout policy and investment policy of high growth firms (Bhattacharya, 1979; Easterbrook, 1984; Jensen, 1986; 1989). On the one hand, studies by Bhattacharya (1979) and Easterbrook (1984) argue that high growth firms can adopt a policy of high payouts to signal their superior quality while at the same time investing and growing by returning to the market often to raise new capital. On the other hand, free cash flow theory (Jensen, 1986) argues that high payouts are adopted by firms with few growth opportunities as a means to prevent managers from investing in negative NPV projects. Thus, within the framework of the free cash flow theory, high payouts are accompanied by low investment. While this is a desirable outcome if firms choose a payout policy that fits their investment opportunity set, it might not be a desirable outcome if firms choose a payout policy that does not fit their investment opportunity set, such as when a policy of high payouts is adopted by high growth firms. The potential implications of a policy of high payouts on investment echo the concerns for high growth firms going public as income trusts, as high payouts could prevent these firms from investing and growing. This evidence raises the question of whether investment is driven by a firm's payout policy or by its investment opportunity set.

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[21] *"Trusts panned as drag on economy; Little left over for reinvestment Disclosure rules called a concern", The Toronto Star*, 25 September 2003

In this essay, I compare investment and growth of firms that go public as income trusts and firms that go public as corporations. This is done through a study of 235 firms in Canada in the period 1995-2005 of which 121 become income trusts and 115 become public corporations.[22] I test two competing hypotheses on the possible effects of the income trust form on investment of high growth firms. On the one hand, from the standpoint of Bhattacharya (1979) and Easterbrook (1984), one could argue that high payouts can be associated with investment and growth if firms finance further investment by returning to the market to raise new capital. Hence, a prediction can be made that investment and growth for firms that go public as income trusts will still be determined by the characteristics of the asset base. However, the high payouts that characterize income trusts will force these firms to raise capital frequently through seasoned equity offers to finance investment. I call this the *asset base hypothesis*.

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[22] The sample differs from the one of the previous essay because some income trust IPOs and public corporation IPOs do not have accounting data in the years subsequent to the offering. Please refer to the data section for details.

On the other hand, from the standpoint of free cash flow theory (Jensen, 1986) a distinctive feature of income trusts is that they pay out all earnings to the shareholders. Hence, a prediction can be made that investment of firms that go public as income trusts will remain at current levels or, in the worse case, will decline over time. By contrast, high growth firms that go public as corporations will experience an increase of investment funded primarily using retained earnings, and experience higher growth. I call this the *free cash flow hypothesis*.

This essay finds support for the *asset base hypothesis*. Firms that go public as income trusts have lower capital expenditures, higher acquisition activity, and return to the market more frequently after the IPO than firms that become corporations. They also experience high growth in assets and sales post-IPO. Overall, regarding the critique that income trusts do not create value for the Canadian economy, the result of this study that income trusts grow through acquisition suggests that income trusts might have served the purpose of consolidating entire industries by re-allocating resources to more efficient users.

This essay makes an important contribution to free cash flow theory (Jensen, 1986) by showing that in case of a mismatch between payout policy and investment opportunity set, both of which affect investment, the effect of investment opportunities prevails. While the free cash flow theory considers the case when the payout policy of a firm matches its investment opportunities, such as when high payouts are adopted by low growth firms, this essay considers the less explored case when the payout policy of a firm does not match its investment opportunities, such as when high payouts are adopted by high growth firms.

Finally, the findings of this essay have some potential policy implications. This essay suggests that income trusts might have created value for the Canadian economy through industry consolidations because of their growth through acquisitions. The diffusion of income trusts might have been fostered by the lack of private equity firms in Canada (Carpentier and Suret, 2006; Cummings and McIntosh, 2006)[23]. This evidence is relevant for policy given the current debate on whether to change the income trust taxation plan before the phase-out planned for 2011. One possibility could be dealing with income trusts in a way similar to how the American government dealt with the MLP in the eighties, by exempting firms whose asset base is suitable for the organizational form, such as firms operating in real estate and in the natural resources sector. This suggestion is further corroborated by some evidence, presented in the popular press, that greater tax revenues were lost as a result of the highly leveraged transactions whereby income trusts were acquired by foreign companies after the legislation was introduced, than prior to the legislation due to firms becoming income trusts[24].

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[23] The study by Cummings and McIntosh (2006) shows that government-sponsored venture capital programs, started in Canada in the 1990's, have become over time the dominant form of venture capital organization and have crowded out other Canadian funds. The effect of the introduction of these programs has been a reduction of the venture capital pool as these government sponsored programs hold a large percentage of capital not invested. This is due in part to fear of redemption from investors, as only individual investors may participate to these programs.

[24] *"Taxes, and avoiding them, on everyone's tongue - Foreign Takeovers"*, Toronto Sun, 11 November 2007

The remaining sections of this essay are organized as follows. Section 4.2 provides an overview of the relevant literature. Section 4.3 illustrates the sampling criteria used and presents descriptive statistics for the firms in the sample. Section 4.4 compares investment for income trusts and public corporations. Section 4.5 compares the capital expansion paths of newly listed firms choosing a payout policy that fits their asset base characteristics with the one of firms choosing a payout policy that does not fit their asset base characteristics. Section 4.6 compares SEO activity for income trusts and public corporations and tests the hypothesis that firms that go public as income trusts due to market timing return to the capital markets often after their IPO. Section 4.7 examines the characteristics of the acquisition activity of income trusts and investigates their role as a mechanism for industry consolidation. Section 4.8 compares operating performance for fit and unfit choices. Section 4.9 concludes.

4.2. Payout Policy and Growth Opportunities

The corporate finance literature argues that firms with few growth opportunities should adopt a policy of high payouts. The free cash flow theory (Jensen, 1986) proposes that low growth firms benefit from high payouts that limit managerial discretion over unused cash flow within the firm. As managers have a preference for running large firms as opposed to profitable ones, the simultaneous presence of unused cash flows and few growth opportunities leads to agency costs in the form of overinvestment (Jensen, 1986; 1989).

By contrast, the effect of high payouts on investment of high growth firms is less clear-cut. The free cash flow theory argues that high growth firms benefit from low payouts as they generate lower amounts of free cash flow. As internally generated funds constitute a cheaper source of capital compared to external debt or equity (Myers and Majluf, 1986), high growth firms should reinvest all or most part of their earnings to finance further investment in a cost-efficient way. Firms that match the level of payouts to the characteristics of their investment opportunity set should experience high operating performance.

Other scholars in the context of the agency cost literature (Easterbrook, 1984) and signalling literature (Bhattacharya, 1979) argue that firms with high growth opportunities could benefit from high payouts. High payouts force firms to return to the capital markets often to raise capital to finance investment, and this ensures that investors can effectively monitor managers and reduce the potential for agency conflicts (Easterbrook, 1984). A somewhat similar prediction is made by Bhattacharya's (1979) model in which high growth firms commit to high dividend payments to signal their superior quality to the investors. The operating performance of high growth firms that pay high dividends is expected to be high.

The prediction of the free cash flow theory that low growth firms should be characterized by high payouts while high growth firms should be characterized by low payouts has received large empirical support. Smith and Watts (1992) find that firms with higher payouts have more assets in place and less growth options. Grullon, Michaely and Swaminathan (2002) find that firms increase dividends when they become mature and their investment opportunity set is shrinking. Ciccotello and Muscarella (1997) show that mature and profitable firms are more likely to abandon the corporate form for the master limited partnership, an organizational form characterized by mandatory dividend payments. They also show that these firms experience a reduction in investment post-conversion. The prediction that high payouts can be suitable for high growth firms has received only little support. An exception is the study by Yoon and Starks (1995) who find that dividend increases are associated with increases in capital expenditures and with revisions in analysts' forecasts of current earnings of the firm.

Earlier in this dissertation I explored the possibility that market inefficiencies lead high growth firms to adopt payout intensive organizational forms, which are normally considered more suitable for low growth firms. This investigation broadly falls under the gambit of the market timing literature (Baker and Wurgler, 2000, 2003; Lowry, 2003; Pagano, Panetta and Zingales, 1998). A central argument of market timing studies is that firms are aware of periods of investor over-optimism and take actions aimed at exploiting them to reduce their cost of equity capital. This leads to actions such as timing of equity issues (Baker and Wurgler, 2000; Lowry, 2003), the decision to pay dividends (Baker and Wurgler, 2004), the decision to go public as public corporations at certain times (Pagano, Panetta and Zingales, 1998) and, as this dissertation proposes, the choice of a particular organizational form while going public.

With specific reference to this study, two predictions can be made regarding the effects of payout-intensive forms such as income trusts on investment and operating performance of high growth firms. On the one hand, from the standpoint of the free cash flow theory one could argue that the investment of high growth firms that go public as income trusts will remain at current levels or, in the worse case, decrease despite the high growth opportunities. This, in turn, will negatively affect firm growth and operating performance. I call the hypothesis that investment and growth will not increase if high growth firms adopt a policy of high payouts, the *free cash flow hypothesis*. On the other hand, from the standpoint of Easterbrook (1984), one could argue that, as investment decisions and growth are driven by the quality of growth opportunities held by a firm, the decision to go public as an income trust will not necessarily prevent high growth firms from investing and growing as long as they can raise capital on the market to finance investment. I call the hypothesis that investment and firm growth will increase if high growth firms adopt a policy of high payouts, the *asset base hypothesis*.

While agency theory and free cash flow theory have not explicitly considered how adopting high payouts to exploit market inefficiencies impacts investment, the literature on market timing has more explicitly considered the role of external factors on investment. So far, however, the evidence has been mixed. Nelson (1959) argues that investment in the form of acquisitions increases during phases of economic expansion – a measure for increased investment opportunities – only in the presence of a simultaneous increase in market prices. More recently, Shleifer and Vishny (2001) provide evidence showing that market valuations determine the timing and the method of payment in acquisitions. More closely related to this paper, studies by Baker, Wurgler and Stein (2003) and Polk and Sapienza (2006), show that equity overvaluations are followed by an increase in investment. Other studies (Morck, Shleifer and Vishny, 1990; Blanchard, Rhee and Summers, 1993), however, argue that prior stock returns do not predict growth rates in investment once one controls for the fundamentals of the firm, such as past profitability and sales. The above studies focus on investment decisions undertaken by firms as a result of overvaluation of their shares by the market. The diffusion of income trusts in Canada constitutes a natural experiment with which to investigate the effect of the overvaluation of an organizational form on the capital expansion paths of newly listed firms.

A review of the literature reveals that earlier studies have somewhat considered the relation between choices driven by external factors and operating performance (Bayless and Chaplinsky, 1996; Jain and Kini, 1994 and Loughran and Ritter, 1995; 1997). These studies try to establish a relation between the reduction in operating performance experienced by some firms after they go public and their decision to issue equity in periods of market overvaluation by arguing that investors are more optimistic during periods of overvaluation. Firms issue equity during periods when their operating performance is exceptionally high so as to take advantage of the fact that investors will be optimistic enough to believe that this performance can be sustained (Jain and Kini, 1994). The focus of these studies, however, is on illustrating the channels through which equity overvaluation affects the timing of equity issues and not on examining the effects of choices driven by external factors on operating performance through investment decisions. The decline in operating performance documented by these studies is not a consequence of the choice to issue equity driven by overvaluation, but rather of the fact that 'exceptional' performance, by definition, is unlikely to be sustained.

4.3. Data and Summary Statistics

I find 381 income trust IPOs and 1,010 public corporation IPOs in Canada over the period 1995-2005 from the *Financial Post* New Issue database. I exclude 209 IPOs of income funds investing in income trust units ('investment funds'), as going public as an income trust is the only viable option for them as per Canadian regulations[25]. I exclude 6 IPOs announced by firms while converting from public corporations to income trusts ('income trust conversions'). I then restrict the sample to firm-commitment offerings, as is standard in the literature (Beatty and Ritter, 1986; Ritter, 1984). After excluding IPOs with issue prices lower than $1 (Ritter, 1991) and missing accounting data, I am left with 127 income trust IPOs and 121 public corporation IPOs. Of these, I exclude 6 income trust IPO and 6 public corporation IPOs because they do not have accounting data beyond the year of the IPO. This leaves 121 income trust IPOs and 115 public corporation IPOs, which constitute the final sample.

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[25] These are mutual funds that exclusively specialize in investing in income trust units.

The distribution of income trust and public corporation IPOs by year is shown in Panel A of Table 4.1. Public corporation IPOs occur more frequently than income trust IPOs in the first half of the sample period (1995-2000). Of the total number of firms going public as corporations, 65.2% do so over the period 1995-2000, vs. 20.7% of the companies going public as income trusts. The only exception is the year 1997 when the percentage of income trust IPOs is higher than the percentage of public corporation IPOs. In the second half of the sample period (2001-2005), income trust IPOs occur more frequently than public corporation IPOs. 79.3% of the firms going public as income trusts in the sample do so over the period 2001-2005, vs.34.8% of the firms going public as public corporations.

Panel B of Table 4.1 presents the industry breakdown for income trust IPOs and public corporation IPOs. Industry classifications are based on the first two digits of the SIC code. I use the same classification of Wu and Kwok (2002), and include an additional industry group to account for the Finance and Real estate industry, which was not included in their study. Firms with two digits SIC code between 60 and 67 are classified as real estate firms. The highest percentage of income trusts IPOs is documented in the Manufacturing industry (SIC codes 20-39) with 26.4% and in the Transportation and Communications industry (SIC codes 40-49) with 27.8%. The highest percentage of public corporation IPOs, equal to 40%, is also documented for the Manufacturing industry, followed by the Services Industry (SIC codes 70-89) with 18.3% and by the Mining and Energy Industry (SIC codes 01-14) with 15.6%. The lowest percentage for both types of IPOs is documented in the Wholesale Industry (SIC codes 50-51) which accounts for 3.3% of income trust IPOs and for 1.7% of public corporation IPOs.

4.4. Effects of the Income Trust Form on Corporate Investment

4.4.1. Univariate Analysis

In this section, I compare several investment measures for firms going public as income trusts and firms going public as corporations without distinguishing between high growth and low growth adopters. Investment is measured in terms of capital expenditures and acquisitions. I use two measures of capital expenditures. The first one measures the extent to which firms use the proceeds of the IPO to fund capital expenditures and is calculated as capital expenditures divided by capital raised by the firm at the IPO. The second one measures the extent to which firms use operating cash flows to fund capital expenditures and is calculated as the operating cash flow of the firm divided by capital expenditures. Negative values of this ratio are set equal to zero, meaning that the operating cash flows of the firm are entirely used to fund current operating activities and cannot be used to fund additional investment.

The acquisition activity of a firm is measured by its goodwill divided by total assets (Wyatt, 2005). Investment activity for firms in the sample is also captured by changes to gross property, plant and equipment (PPE) and by the growth in firm size as in Walker (2005). Accounting data for the year prior to the IPO is obtained from the offering prospectus, while accounting data for the three years after the IPO is obtained from the Return on Business (ROB) database and is checked with Compustat for consistency. Loughran and Ritter (1997) observe that, as accounting ratios tend to be highly skewed, median values are more informative than mean values. For this reason, while I present both means and medians for the accounting ratios, I rely on the medians while making most inferences.

Panel A of Table 4.2 presents investment measures at few points for firms that become income trusts: at the fiscal year-end prior to the IPO, and at the fiscal year-end of each of the three years post-IPO. Median capital expenditures as a fraction of the proceeds of the IPO appear stable before and after the IPO, ranging between 2.1% and 2.3% in year -1, +1 and +3, and 3.5% in year +2. The fraction of operating cash flows used to fund capital expenditures is equal to 3.951 in year -1, 4.591 in year +1, 3.277 and 3.711 in years +2 and +3 respectively. The median income trust uses between 24.1% and 34.1% of the combined proceeds of the IPO and operating income to fund capital expenditures post-IPO. The median ratio of operating income and proceeds of the IPO for income trusts increases from 14.3% in year -1 to 19.9% in year 3 as the operating income for income trusts increases.

The median dividend-to-earnings ratio for income trusts increases dramatically after the IPO, consistent with the emphasis of income trusts on distributing earnings back to investors. Prior to the IPO, the median income trust does not pay any dividends, while in the first year after the IPO it pays out 81.4% of its earnings. The percentage of earnings paid by income trusts in the form of dividends declines to 80.3% in year +2 and to 72.1% in year +3. The median goodwill-to-assets ratio for income trusts increases from 0% in year -1 to 7.4% in year +1, then it declines to 4.5% in year +2 and to 3.3% in year +3. This result suggests that a great part of the firms that become income trusts engage in acquisitions mainly at the IPO. The acquisition activity of income trusts declines over time, without however reverting back to the pre-IPO level.

Median gross PPE for income trusts also increases over time, from $42.6 million in year -1 to $160.3 million in year +3. The increase in PPE is driven by the increase in acquisitions, as capital expenditures remain substantially similar to the pre-IPO level. The increase in gross PPE post-IPO for income trusts is reflected by the increase in firm size exhibited by these firms. The evidence that income trusts engage in acquisitions and increase in size does not appear consistent with the predictions of free cash flow theory that payout-intensive organizational forms do not emphasize firm growth.

Median capital expenditures as a fraction of the proceeds of the IPO for public corporations, presented in Panel B of Table 4.2, increase from 4.2% in year -1 to 14.7% in year +1, after which they decline to 10.7% in year +3. The median operating income to capital expenditures ratio decreases in the first two years after the IPO, from 1.075 in year -1 to 0.57 in year +2, then it increases to 0.618 in year +3. The median public corporation uses between 125.8% and 172.5% of the combined proceeds of the IPO and operating cash flows to fund capital expenditures. For the most part, public corporations fund capital expenditures primarily using operating cash flows. However, the difference between mean and median value of the operating income to capital expenditures ratio suggests that some firms use their entire operating cash flows to run current operations and need to use a larger fraction of the proceeds of the IPO to fund capital expenditures. The median operating income as a fraction of the proceeds of the IPO ranges between 16.7% in year +1 and 10.2% in year +3, suggesting that the capital raised by public corporations at the IPO is much larger than their operating income. The difference between mean and median value of this variable points to the presence of a group of profitable public corporations that raise a relatively low amount at the IPO.

The median public corporation is characterized by a lower goodwill to assets ratio than the median income trust both before and after the IPO. This suggests that investment for public corporations relies more on capital expenditures than on acquisitions. This conclusion is supported by the evidence that median gross PPE for public corporations increases gradually over time, unlike the gross PPE of income trusts. The size of the median public corporation increases at the IPO and declines in years +2 and +3, without reverting back to the pre-IPO level. This result suggests that part of the increase in size experienced by these firms at the IPO might be due to the increase in cash due to the proceeds of the offer. Overall, the result that public corporations exhibit higher capital expenditures post-IPO is consistent with the prediction of free cash flow theory that the corporate form is suitable for firms with high growth potential due to its focus on reinvestment and growth.

Panel C of Table 4.2 reports year by year t-statistics and z-statistics testing the difference in means and medians between income trusts and public corporations. T-statistics and z-statistics for the test of differences in capital expenditures as a fraction of the proceeds of the IPO and the ratio between operating income and capital expenditures are generally negative and significant, suggesting that income trusts are characterized by lower capital expenditures. Mean and median goodwill to assets ratios for income trusts are significantly higher than for public corporations, consistent with the earlier result that income trusts exhibit higher acquisition activity post-IPO. Median PPE and firm size are significantly higher for income trusts than for public corporations both before and after the IPO. The evidence that firms choosing to become income trusts have lower capital expenditures and are larger in size is consistent with free cash flow theory.

Finally, Panel D of Table 4.2 reports raw changes in investment between year -1 and year +3 for income trusts and public corporations. Median capital expenditures for income trusts remain stable at the pre-IPO level while median goodwill is higher after the IPO, more so between -1 and +1. Thus, the increase in gross PPE and firm size post-IPO experienced by income trusts can be traced back to increased acquisition activity. Median capital expenditures as a fraction of the proceeds of the IPO for public corporations increase after the IPO, while the ratio of operating income and capital expenditures remains stable at the pre-IPO levels until year +2, then it increases significantly. The dividend-to-earnings ratio for income trusts increases post IPO. In several cases, firms that did not pay dividends altogether before going public as income trusts started paying out a significant percentage of their earnings after the IPO. The dividend-to-earnings ratio remains stable at the pre-IPO level for public corporations, consistent with extant literature (Jensen, 1986) and with previous results pointing to the need for these firms to use earnings to fund current operations and future capital expenditures.

Overall, these results confirm that public corporations experience a significant increase in capital expenditures and a small but significant increase in acquisition activity post-IPO. The increase in gross PPE and firm size post-IPO for public corporations can be traced back to two sources: increased capital expenditures and increased acquisition activity, although the first one appears to be the main factor. As a robustness check, I repeat the analysis including only income trusts and public corporations whose data are available for the entire three-year period after the IPO, but this does not change the sign and magnitude of the results.

I further validate my evidence on the investment of high growth firms going public as income trusts using a sample of public corporations that convert to income trust ('income trust conversions') as a robustness check. Conversions are non-cash transactions in which existing shareholders are given units in the entity arising from the conversion in proportion to the number of shares held in the entity pre-conversion (Michaely and Shaw, 1995). The fact that no new shares are issued makes it reasonable to argue that firms going public as income trusts are more likely to do so due to external factors, while firms converting to income trusts are more likely to do so due to fit. Analyzing investment decisions in cases where the income trust form is adopted through a conversion is important for several reasons. As converting firms are more likely to be driven by fit, this analysis should provide an accurate representation of the effect of the high payouts that characterize income trusts on investment. Also, it ensures continuity with previous studies that explore how other payout-intensive organizational forms affect investment (Ciccotello and Muscarella, 1997; Kaplan, 1989; Smith, 1989).

Panel A of Table 4.3 reveals that median capital expenditures decline slightly after the conversion, from $21.74 millions in year -1 to $19.13 millions in year +3. The decline in capital expenditures is consistent with previous evidence on LBOs (Kaplan, 1989), leverage recapitalizations (Denis and Denis, 1993) and MLPs (Ciccotello and Muscarella, 1998). Prior to the conversion most firms do not pay any dividends. After the conversion the dividend-to-earnings ratio increases to 72.5% in years +1 and +2 and 83% in year +3, suggesting that firms now pay out most of their earnings in form of dividends. The payout policy of income trust conversions appears similar to that of income trust IPOs. The median goodwill to assets ratio increases from 0% in year -1 to 5.5% in year +3. While the 3.5% increase in goodwill between -1 and +1 is sizeable, further increases are of smaller entity, +1.1% between +1 and +2 and +0.9% between +2 and +3. It appears that firms becoming income trusts through a conversion engage in acquisitions mainly at the time when they switch organizational form. This conclusion is supported by evidence that PPE and firm size both increase more dramatically between -1 and +1 and less afterwards.

4.4.2. Multivariate Analysis

The univariate results suggest that high growth firms adopting a policy of high payouts experience a decline in capital expenditures and an increase in acquisitions. I now test these results in a multivariate setting using the Heckman (1979) model. I choose this methodology as it allows controlling for factors affecting the level of capital expenditures and goodwill while at the same time controlling for factors affecting a firm's choice of whether to go public as an income trust or as a public corporation.

The estimation of the Heckman model follows a two-step procedure. At the first step, a firm's choice of becoming an income trust rather than a public corporation is estimated using a probit model in which the dependent variable takes value one if the firm becomes an income trust and zero otherwise. At the second step, cumulative capital expenditures and goodwill accounts post-IPO are estimated through an OLS regression as a function of observable firm characteristics and of a new variable, the inverse mills ratio, derived from the coefficients of the probit model estimated at the first step. Including the inverse mills ratio allows estimating the marginal impact of becoming an income trust on cumulative capital expenditures and goodwill accounts while correcting for the self-selection bias induced by the fact that the choice between the income trust form and the corporate form is not random. That is, firms are not randomly attributed to one of the two groups, but instead choose the group that they consider more efficient.

The probit model at the first step has the form

$$Pr(IT_{\cdot i}) = F\left(\beta_0 + \beta_1 * LogAssets_i + \beta_2 * Age_i + \beta_3 * Cashoutflow_i / A_i + \beta_4 * Opinc_i / A_{i_i}\right)$$

The dependent variable is a dummy variable taking value 1 if a firm goes public as an income trust. F(.) is the cumulative distribution function of a standard normal variable. In specification (1), the independent variables are the natural logarithm of total assets (*Log Assets*), the number of years between the start of operations and the date of the IPO (*Age*), the difference between operating cash flow and investment cash flow (cash outflow) divided by total assets (*Cash outflow/ Assets*), and the operating income before amortization and depreciation as fraction of total assets (*Opinc/Assets*). Specification (2) includes also industry dummies. The independent variables are chosen with reference to the predictions of free cash flow theory (Jensen 1986; 1989).

In specification (1) of Table 4.4, older and more profitable firms are more likely to become income trusts, a result consistent with the predictions of free cash flow theory regarding the type of firms that are ideal candidates for payout-intensive organizational forms. The amount of investment as a fraction of operating cash flows for income trusts is comparable with that of public corporations. This result is inconsistent with the prediction of free cash flow theory that payout-intensive forms are suitable for mature firms with little or no growth opportunities. In specification (2), older and more profitable firms are more likely to go public as an income trust. A one standard deviation increase in the age increases the sample average probability that firms will go public as an income trust by 11.5%, while a one standard deviation increase in profitability increases the sample average that firms will go public as an income trust by 11.7%. Firms in Transportation and Communication industry and in the Retail industry appear to be more likely to become income trusts. The finding that firms in the Transportation and Communication industry are more likely to go public as income trusts could be related to the inclusion of the SIC group 49, which identifies firms operating in the pipeline industry. Pipelines are an example of passive business, which the literature predicts to be suitable for payout intensive forms.

I test the hypothesis that income trusts experience lower cumulative capital expenditures and higher cumulative acquisitions post-IPO using the specification

$$Y = \beta_0 + \beta_1 LogAssets_{-1} + \beta_2 Age + \beta_3 IMR + \varepsilon$$

Where $Y = \sum_{i=1}^{t} Capex_i / \$Raised$ in specification (1) and $Y = \sum_{i=1}^{t} Goodwill_i / Assets$ in specification (2) and $t \in (1, 2, 3)$ refer to each of the three years post-IPO.

The independent variables are the natural logarithm of total assets, which is included to capture potential size effects, the age of the firm at the IPO and the inverse mills ratio (IMR) obtained from specification (2) of the probit model in Table 4.4. The inverse mills ratio captures the effect of observable characteristics on a firm's decision to become an income trust. Based on the results of the univariate comparisons, I expect the coefficient of the IMR to be negative and significant in specification (1), a signal that income trusts have lower capital expenditures than public corporations. I also expect the IMR to be positive and significant in specification (2), a signal that income trusts have higher acquisition activity than public corporations.

In specification (1) of Table 4.5 the coefficient on the inverse mills ratio is negative and significant, confirming that income trusts are characterized by lower capital expenditures post IPO. The coefficient on the age of the firm has the expected negative sign, suggestive that older firms have lower capital expenditures, but it is not significant. In specification (2), the coefficient on the inverse mills ratio is generally positive and significant, indicating that income trusts engage in significantly higher acquisition activity post-IPO. The coefficient on firm size is negative and significant, suggesting that smaller firms engage in lower acquisition activity. Overall, these multivariate results confirm that newly listed firms that become income trusts are characterized by lower capital expenditures and higher acquisition activity post-IPO, and are ultimately supportive of both the *asset base hypothesis* and the *free cash flow hypothesis*.

4.5. Market Driven Choices of Organizational Form and Investment

I now compare capital expansion paths after the IPO for fit and unfit choices of organizational form. The ultimate goal is to examine whether firms that become income trusts for reasons other than fit exhibit lower levels of investment post-IPO and do not grow, as predicted by the '*free cash flow*' hypothesis; or substitute acquisitions to capital expenditures and grow as predicted by the '*asset base*' hypothesis.

I use propensity scoring (Rosembaum and Rubin, 1983; 1984) to examine the effect of the choice of going public as income trusts because of market factors on the capital expansion paths of high growth firms. This methodology allows comparing firms that, based on their asset base characteristics should have chosen an organizational form and that made that choice ('fit choices), with firms that should have chosen an organizational form, but choose the other one ('unfit choices). Propensity scoring allows matching firms that become income trusts with firms that become public corporations that are as similar as possible based on observable factors, in this case the characteristics of their asset base. The assumption is that a difference in the choice made can be attributed to external factors, as firms whose asset base presents similar characteristics should choose the same organizational form.

The analysis is implemented in two related steps. First, I use model 2 in Table 4.4 to estimate the probability that a firm will become an income trust given the characteristics of its asset base. Second, I rank the estimated probabilities and choose 48%, the median, as the cut-off for low propensity. Figure 4.1 illustrates how fit and unfit choices of organizational form are identified. A firm that chooses the income trust (corporate) form and has a propensity score above 48% is defined as a 'fit income trust' ('unfit public corporation'). In contrast, a firm that chooses the income trust (corporate) form and has a propensity score below 48% is defined as an 'unfit income trust' ('fit public corporation').The choice of 48% represents a trade-off between the need to choose a conservative cut-off and the need to obtain representative samples of fit and unfit choices.

Before comparing investment for firms that become income trusts despite this organizational form does not match their asset base and firms that become public corporations and are appropriate for this organizational form, I compare investment for unfit and fit income trusts. If the '*free cash flow hypothesis*' is right, investment decisions for the two types of firms should be indistinguishable. By contrast, if the '*asset base hypothesis*' is right, investment decisions for the two firms should be different, before and after the organizational form is chosen.

4.5.1. Fit vs. Unfit Income Trusts

Panel A of Table 4.6 reports the age at the IPO and investment measures for 'unfit income trusts' in the year before and in the three years after the IPO. The median age of unfit income trusts is six years, a result inconsistent with the prediction of the free cash flow theory that mature firms are more likely to be income trusts. Median capital expenditures as a fraction of the proceeds of the IPO appear stable at 3.3%-3.7%, with the exception of year +2 when the ratio is equal to 5.8%. The median ratio of operating income and capital expenditures decreases moderately after the IPO, from 4.786 in year -1 to 3.712 in year +3. Prior to the IPO, the median 'unfit income trust' uses 24.6% of the combined proceeds of the IPO and operating income to fund capital expenditures, while in year +3 the percentage equals 30.2%. The median goodwill to assets ratio increases from 0% in year -1, to 23.9% in year +3. The increase in goodwill is accompanied by an increase in gross PPE and firm size. Unfit income trusts grow primarily due to acquisitions, as capital expenditures remain stable at their pre-IPO level.

Panel B of Table 4.6 reports age and investment measures for 'fit income trusts' in the year before and in the three years after the IPO. Consistent with the prediction of free cash flow theory, the median age at the IPO is 23 years. Median capital expenditures as a fraction of the proceeds of the IPO and median operating cash flows divided by capital expenditures are comparable before and after the IPO. Prior to the IPO, the median 'fit income trust' uses 1.4% of the proceeds of the IPO and 27.8% of operating cash flows to fund capital expenditures. Three years after the IPO these figures amount to 2.1% and 27.5%. Median goodwill accounts increase from 0% in year -1 to 6.4% in year +1, then decline to 0% by year +3. Gross PPE experiences a moderate increase between -1 and +1, from $ 35.9 million to $ 57.8 million and later increases to $164.7 million in year +3.

T-statistics and z-statistics for testing year-to-year difference in means and medians between unfit and fit income trusts are reported in Panel C of Table 4.6. Prior to the IPO, the median 'unfit income trust' is significantly younger, and is characterized by higher capital expenditures and higher goodwill accounts. There is however no difference between the two groups in terms of operating cash flows used to fund capital expenditures, gross PPE and size. Capital expenditures as a fraction of the proceeds of the IPO are significantly higher for 'unfit income trusts' in year +1, after which they are not significantly different across the two groups.

The goodwill to assets ratio is higher for 'unfit income trusts' suggesting that these firms exhibit a higher acquisition activity. The dividend to earnings ratio for unfit and fit income trusts is comparable before and after the IPO. This suggests that there is no difference in payouts between high growth firms whose characteristics are a good fit for the high payouts that characterize income trusts and newly listed firms whose characteristics are not a good fit.

The raw changes in investment, reported in Panel D of Table 4.6, show that both measures of capital expenditures remain stable after the IPO. The median goodwill to assets ratio increases after the IPO for both unfit and fit income trusts, although the magnitude of the change is greater for unfit income trusts. Thus, while the pattern of capital expenditures post-choice is comparable across the two groups, the pattern of acquisitions appears different. Fit income trusts are more likely to engage in acquisitions at the time of the IPO, while unfit income trusts are more likely to engage in repeated acquisitions over time.

In the case of 'unfit income trusts', the dividend to earnings ratio increases between -1 and +1 and decreases afterwards (-1.1% between +1 and +2 and -12.2% between +2 and +3). In the case of 'fit income trusts', the ratio increases between -1 and +2, then declines in +3 (-1.8%). The evidence that 'unfit income trusts' experience a decline in payouts post IPO could be motivated by the fact that, as these firms are less suitable for adopting high payouts, they are unable to sustain them in the long run.

4.5.2. Fit vs. Unfit Public Corporations

I now compare the capital expansion paths of 'unfit public corporations' and 'fit public corporations'. Investment measures for 'unfit public corporations' are presented in Panel A of Table 4.7. Capital expenditures as a fraction of the proceeds of the IPO for 'unfit public corporations' peak in year +1, then decline slightly in the subsequent years. The fraction of operating cash flows used to fund capital expenditures increases from 1.232 in year -1 to 1.986 by year +3, suggesting that the median 'unfit public corporation' funds capital expenditures mainly using operating cash flows. In year -1, the median 'unfit public corporation' uses 90.8% of the proceeds of the IPO combined with operating cash flows to fund capital expenditures. By year +3, capital expenditures for the median 'unfit public corporation' account for 70% of the proceeds of the IPO and operating cash flows combined. The dividend to earnings ratio remains stable at the pre-IPO levels and equal to 0%. Thus, 'unfit public corporations' behave more like 'fit public corporations' rather than 'fit income trusts' when it comes to deciding the level of dividends to be paid out to the investors.

The acquisition activity undertaken by unfit public corporations is low before and after the IPO. The median goodwill to assets ratio increases from 0% in year -1 to 4.3% in year +3. Gross PPE increases from $67 million in year -1 to $132.8 million in year +1, 135 million in year +2 and $164.2 million in year +3. A similar trend is displayed by firm size, which increases from 18.8 in year -1 to 19.89 in year +3. Overall, it appears that 'unfit public corporations' grow primarily through capital expenditures rather than acquisitions, which are primarily funded by operating cash flows.

Investment measures for fit public corporations are presented in Panel B of Table 4.7. Capital expenditures as a fraction of the proceeds of the IPO peak in year +1, after which they decline slightly by year +3. Median operating cash flows used to fund capital expenditures decrease over time, suggesting that 'fit public corporations' gradually fund a larger fraction of capital expenditures using the proceeds of the IPO. This result is motivated by the fact that a large number of 'fit public corporations' use most or all their operating cash flows to fund current operations and have little or no funds left to finance capital expenditures.

The higher average values of the operating income to capital expenditures ratio point to the presence of a small group of 'fit public corporations' that are able to fund their capital expenditures primarily with operating cash flows. The average 'fit public corporation' uses 50.5% of the proceeds of the IPO and operating cash flows combined to fund capital expenditures in year -1, which increase to 82.7% by year +3. The dividend to earnings ratio remains stable at the pre IPO level and equal to 0%. This evidence is consistent with previous univariate results showing that these firms retain all available earnings to fund current operations and capital expenditures, and is ultimately consistent with the free cash flow theory. 'Fit public corporations' do not engage in significant acquisition activity before or after the IPO. Thus, the increase in gross PPE and firm size exhibited by these firms after the IPO occurs as a result of increased capital expenditures, which are primarily funded by operating cash flows.

T-statistics and z-statistics for the test of year-to-year difference in means and medians between unfit and fit public corporations are reported in Panel C of Table 4.7. Unfit public corporations are significantly older, larger in size, and are characterized by higher capital expenditures and higher goodwill. Consistent with the evidence presented in Panels A and B, operating income as a fraction of the proceeds of the IPO is higher for 'unfit public corporations,' which rely on internally generated funds to finance capital expenditures.

Raw changes in investment for unfit and fit public corporations, presented in Panel D of Table 4.7, confirm that capital expenditures as a fraction of the proceeds of the offer increase for both groups of firms, although the growth in capital expenditures for fit public corporations appears to slow down faster. This is likely due to the fact that 'fit public corporations' are more likely to use part of the proceeds of the IPO for uses other than financing future growth, as they can rely less on internally generated funds. The median goodwill to assets ratio increases significantly after the IPO only in the case of 'unfit public corporations.' Thus, the increase in size experienced by both types of firms appears to be driven by an increase in capital expenditures and acquisition activity in the case of 'unfit public corporations,' and by an increase in capital expenditures only in the case of 'fit public corporations.' 'Unfit public corporations' grow primarily through capital expenditures rather than through acquisitions like income trusts. This evidence appears to be broadly consistent with the *free cash flow hypothesis.*

4.5.3. Unfit Income Trusts vs. Fit Public Corporations

I now test the *asset base hypothesis* and the *free cash flow hypothesis* by comparing investment for 'unfit income trusts' and 'fit public corporations' pair-matched according to their propensity score and on the year of their IPO. The results of this comparison are presented in Table 4.8. I use model 2 in Table 4.4 to determine the propensity to become an income trust for each firm in the sample based on its characteristics and its industry affiliation. Pair-matching firms according to their propensity score ensures controlling for the effect of asset base characteristics and for potential industry effects on investment so as to examine the effect of market driven choices of organizational form on the capital expansion paths of newly listed firms.

Panel A and B of Table 4.8 report the age at the IPO and investment measures for 'unfit income trusts' and 'fit public corporations'. The median age at the IPO is six years for both groups of firms. Capital expenditures as a fraction of the proceeds of the IPO for 'fit public corporations' increase from 4.6% to 15.4% between year -1 and year +1, then decrease to 14.4% by year +3. The fraction of operating cash flows used to fund capital expenditures decreases from 1.847 in year -1 to 0.961 in year +1, after which it increases to 1.59 in year +3. After the IPO, fit public corporations increase the fraction of capital expenditures funded by the proceeds of the offer and the fraction funded by operating cash flows. The median goodwill to assets ratio for 'fit public corporations' reveals that these firms do not engage in substantial acquisition activity.

Prior to the IPO, median capital expenditures as a fraction of the proceeds of the IPO for 'unfit income trusts' and for 'fit public corporations,' presented in Panel C of Table 4.8, appear comparable (3.7% vs. 4.6%). After the IPO, median capital expenditures as a fraction of the proceeds of the offer are lower than for 'fit public corporations.' Prior to the IPO, median goodwill accounts as a fraction of assets for 'unfit income trusts' and 'fit public corporations' are not significantly different, suggesting that the two groups engage in acquisitions to a similar extent . After the IPO, however, unfit income trusts exhibit significantly higher levels of goodwill. Investment of 'unfit income trusts' relies less on capital expenditures and more on acquisitions. While prior to the IPO 'unfit income trusts' pay out a fraction of their earnings similar to that of 'fit public corporations,' after the IPO they pay out a much larger fraction of earnings in form of dividends. Median PPE and firm size are not different across the two groups either before or after the IPO.

Raw changes in investment measures for 'unfit income trusts' and 'fit public corporations,' presented in Panel D of Table 4.8, confirm the increase in capital expenditures for 'fit public corporations' and the increase in goodwill for 'unfit income trusts.' Thus, it appears that firms with corporation-like characteristics that choose to become income trusts grow via acquisitions, while firms with corporation-like characteristics that choose to become corporations grow via capital expenditures. Consistent with previous results, the dividend-to-earnings ratio for 'unfit income trusts' increases significantly after the IPO, while it remains stable at the pre-IPO levels in the case of 'fit public corporations.'

4.6. SEO Activity by Income Trusts and Public Corporations

I now investigate in further detail the hypothesis that income trusts return frequently to the capital market after the IPO to finance their growth through acquisitions. I collect information on the number of seasoned equity offerings (SEOs) completed by firms going public as income trusts and firms going public as corporations in the three years after the IPO from the *Financial Post* New Issue database. The goal is to investigate if income trusts are more likely to go SEO due to their lower reliance on internal funds, and whether they are more likely to use the proceeds for acquisitions. Information on the number of SEOs, the offering price, the number of shares constituting the primary and secondary components, and the purpose of the offering, are collected from the *Financial Post* New Issue database. SEOs for which the information on either the number of shares offered or the offering prices was not available are excluded from the sample.

4.6.1. SEO Activity Income Trusts vs. Public Corporations

Panel A of Table 4.9 compares the total number of SEOs for income trusts and public corporations. Out of the 121 income trusts in the sample, 50 go SEO as least once in the three years following the IPO. The total number of SEOs for these

50 firms is 92. Among public corporations, the number of firms going SEOs at least once in the three years after the IPO is 33 out of 114. The total number of SEOs for these 33 firms is 52. For 62 out of 92 SEOs by income trusts (67.4% of the cases), the stated purpose is 'Acquisition', vs. 3 out of 52 SEOs by public corporations (5.8% of the cases). In contrast, for 10 out of the 52 public corporation SEOs (19.2% of the cases), the stated purpose is "Capital expenditures', vs. 0% for income trusts. In the case of income trusts, the purpose of the SEO is neither acquisition nor capital expenditures in 30 out of 92 cases (32.6%). The most common purpose, after 'Acquisition', is 'Debt Reduction' which is mentioned in 20.6% of the cases, while 'Unknown' is mentioned in 11.9% of the cases.

In the case of public corporations, the purpose of the SEO is neither acquisition nor capital expenditures in 39 out of 52 cases (75%). It appears that public corporations raise relatively little capital to finance future growth, either through capital expenditures or through acquisitions. The purpose of the SEO for public corporations is most frequently 'Unknown' (34.6% of the cases), or 'General Corporate' (17.3% of the cases). This evidence on SEOs of public corporations is in contrast with the evidence by Kryzanowski and Rakita (2003) that 'Exploration/ Development and Production' is the most recurrent purpose for SEO in the period 1993-1997, followed by 'Acquisitions'. This difference is likely motivated by the fact that the study by Kryzanowski and Rakita (2003) does not impose the condition that SEOs must occur within three years from the IPO.

Panel B of Table 4.9 presents descriptive statistics on the characteristics of income trusts SEOs and public corporation SEOs. *Gross proceeds* of the offer are calculated as the product of total number of shares offered and offering price, while *Capital raised* is the product of the primary component of the offering and the offer price. This second variable is a more accurate measure of the capital raised by a firm given that the amount of the secondary component does not accrue to the firm, but to the selling shareholders. Income trusts SEOs raise more capital than public corporation SEOs ($64.32 million for income trusts vs. $49.46 million for public corporations). The amount raised by income trust SEOs whose purpose is 'Acquisition' is greater than the amount raised by public corporation SEOs ($91.48 million for income trusts vs. $14.82 million for public corporations), while the opposite is true in the case of SEOs whose purpose is 'Capital expenditures' ($0 for income trusts vs. $50.15 million for public corporations).

The evidence on seasoned equity offerings reveals that, contrary to the predictions of free cash flow theory, income trusts are more likely to raise additional capital following their IPO than public corporations and to use the capital raised for acquisitions.

4.6.2. SEO Activity for Fit vs. Unfit Choices

Panel A of Table 4.10 compares the SEO activity for firms that choose the payout policy that fits their asset base characteristics versus that of firms that choose the payout policy that does not fit their asset base characteristics due to market timing. Of the 39 'unfit income trusts,' 16 (41%) complete at least one seasoned equity offering in the three years after the IPO and are responsible for 35 offerings, while of the 82 'fit income trusts' 34 (41.5%) have SEO at least once in the three years after the IPO, and are responsible for 57 offerings. Of the 35 'unfit income trusts,' 80% have stated purpose 'Acquisitions', vs. roughly 63% of the 57 offerings made by 'fit income trusts.' Thus, the primary reason given by income trusts for their SEOs is to raise capital to fund future acquisitions. The evidence that 'unfit income trusts' go SEO more often and are more likely to raise money for acquisitions is consistent with the *asset base hypothesis.*

Of the 32 'unfit public corporations,' 12 (37.5%) complete at least one SEO in the three years after the IPO and are responsible for 19 SEOs. Of the 83 'fit public corporations,' 21 (25.3%) are responsible for 33 SEOs. 'Fit public corporations' engage in subsequent offerings more frequently than 'unfit public corporations.' Of the 19 SEOs by 'unfit public corporations,' 10.5% have the stated purpose of 'Acquisitions' and 10.5% have the stated purpose of 'Capital expenditures', vs. 3.03% and 24.2% of 'fit public corporations.' In the case of 'unfit public corporations,' the purpose of the SEO is neither acquisitions nor capital expenditures in 79% of the cases, vs. 72.7% for 'fit public corporations.' The most frequent purpose mentioned by 'unfit public corporations' is 'Unknown', mentioned in 47.4% of the cases, followed by 'General Corporate' mentioned in 21% of the cases, while 'Unknown' and 'Working capital' with 24% and 21% are the most frequently mentioned purposes of the SEO for 'fit public corporations.'

Gross proceeds raised by 'unfit public corporations' at the SEO are significantly higher than the corresponding figures for 'fit public corporations.' However, as the SEOs undertaken by 'unfit public corporations' are more likely to have a secondary component, the amount of capital raised by these firms at the SEO is comparable. The amount of funds raised by firms in the two groups to finance acquisitions and capital expenditures is also comparable. Overall, unfit and fit public corporations return to the capital markets after the IPO with similar frequency and use the proceeds of the offering for reasons other than funding future growth. This evidence that unfit and fit public corporations behave similarly when returning to the capital markets after the IPO appears consistent with the *free cash flow hypothesis.* However, the fact that these firms do not use a larger fraction of the proceeds of the offering to fund investment appears puzzling; especially in light of the fact that many public corporations use their operating cash flows entirely to run their business and therefore cannot use them to fund their capital expenditures.

Finally, I compare the SEO activity for 'unfit income trusts' and for 'fit public corporations' for a more direct test of the *asset base hypothesis* and the *free cash flow hypothesis*. If the *asset base hypothesis* is right, 'unfit income trusts' should raise more capital than public corporations through seasoned equity offerings, given that their high payouts deplete the firm of all its internally generated funds, and should be more likely to use the proceeds for acquisitions. If the *free cash flow hypothesis* is right, I should document the opposite or at least no difference in the proceeds raised by the two types of firms for acquisitions.

Of the 39 'unfit income trusts' (Panel A, Table 4.11), 16 complete at least one SEO in the three year period after the IPO corresponding to a total of 35 offerings, while 9 of the 39 'fit public corporations' complete at least one SEO, for a total of 15 offerings. Of the 35 SEOs by 'unfit income trusts', 80% have as stated purpose 'Acquisitions' versus roughly 13% of 'fit public corporations.' The purpose is neither acquisition nor capital expenditures for 7 out of the 35 SEOs completed by 'unfit income trusts.' The most frequent purpose after "Acquisitions" is "Debt Reduction," mentioned in 8.6% of the cases. The purpose is neither acquisition nor capital expenditures in 5 out of 9 SEOs by 'fit public corporations.' The most frequent purpose for 'fit public corporations' after "Capital Expenditures," is "Unknown", mentioned in 12.5% of the cases.

Total gross proceeds raised by 'unfit income trusts' and 'fit public corporations,' reported in Panel B of Table 4.11, are comparable. However, as 'fit public corporations' are more likely to have a secondary component, the capital raised at the IPO is higher for 'unfit income trusts.' The average 'unfit income trust' raises eight times the amount raised by 'fit public corporations' to finance acquisitions ($91.54 million vs. roughly $11.13 million), but raises a lower amount of capital to fund capital expenditures ($0 million vs. $29.56 million). Overall, the evidence that 'unfit income trusts' return to the capital markets more frequently after the IPO and are more likely to use the capital raised for acquisitions supports the *asset base hypothesis*.

4.7. Income Trust Acquisition Activity and Industry Consolidations

The analysis of the investment policy for income trusts and public corporations suggests that income trusts, constrained in their ability to fund capital expenditures using internal funds, rely on acquisitions to grow. They also appear to raise capital often from the investors through seasoned equity offering in order to fund their acquisitions. Taken together, these findings suggest that income trusts' growth through acquisitions might have served the purpose to consolidate their industry and ultimately might have created value for the Canadian economy.

In order to validate this hypothesis, I collected the SIC code and the country of origin of the firms acquired by income trusts and public corporations, and information on the method of payment of the acquisition from the SDC Mergers and Acquisitions database. Following Loughran and Vijh (1997), acquisitions are classified as *cash offers*, in case the acquisition is paid using cash only, *stock offers*, in case the acquisition is paid using shares of the acquiring firm only, and as a mixed offers in all other cases.

The comparison of the acquisition activity of income trusts and public corporations is presented in Table 4.12. Of the 121 income trusts included in the sample, 45 (37.2%) engage in acquisitions, vs. 55 out of 114 public corporations (48.2%). The difference in the number of acquisitions made by income trusts and public corporations is striking; 277 for income trusts vs. only 85 for public corporations. Most targets are Canadian firms (255 or 92.06% for income trusts, vs. 63 or 74.12% for public corporations) and operate in the same industry as their acquirer (252 or 90.9% for income trusts and 67 or 78.82% for public corporations). The targets of income trusts are Canadian firms and operate in the same industry as their acquirer in 232 out of 277 cases (83.75% of the cases), while the targets of public corporations are Canadian firms and operate in the same industry as their acquirer in 54 out of 85 cases (63.53% of the cases).

These findings provide initial support to the hypothesis that income trusts might have consolidated several industries in Canada in two of the three ways identified by Brown, Dittmar, and Servaes (2005) in their study of US industry consolidations. Some income trusts are firms that have become large enough to acquire smaller competitors. Other income trusts start out as 'roll-up IPOs' by merging together several operating entities in the same industry which then go public as a unique entity adopting the income trust form.

Income trusts use mostly cash to fund their acquisitions (70.76% of the cases), while most public corporations use mixed offers (64.7% of the cases). However, several income trusts do not use existing cash to pay for acquisitions, but issue new units and use the proceeds of the offer to fund acquisitions (92 out of 196 cases or 46.9%). While previous studies propose that firms time the market during periods of overvaluation using equity to pay for acquisitions (Shleifer and Vishny, 2003), another way to take advantage of overvaluations is to issue equity and use the proceeds of the offer to pay for acquisitions. In 96 out of 277 cases (92 cash acquisitions accompanied by equity offers and 4 pure stock acquisitions), income trusts are able to take advantage of their overvalued equity to fund acquisitions.

I compare the acquisition activity of unfit and fit income trusts in Panel C of Table 4.12. The *asset base hypothesis* predicts that 'unfit income trusts' will engage in acquisitions more frequently than 'fit income trusts,' as they use acquisitions as a substitute for capital expenditures. Thus, 'unfit income trusts' should be primarily responsible for industry consolidations. 94.8% of 'unfit income trusts' engage in acquisitions prior to or after the IPO vs. 52.4% of 'fit income trusts.' The difference in the number of acquisitions across the two groups (191 for 'unfit income trusts' vs. 86 for 'fit income trusts') is almost as striking as the difference between income trusts and public corporations. Also, 88.5% of the firms acquired by 'unfit income trusts,' are Canadian, and 94.2% are firms operating in the same industry, while 89.5% of the firms acquired by 'fit income trusts' are Canadian and 83.7% operate in the same industry. The target is both a Canadian firm and it operates in the same industry as its acquirer in 86.4% of the cases for 'unfit income trusts,' vs. 83.7% of the cases for 'fit income trusts.' While both unfit and income trusts might have acted as a vehicle for industry consolidation, the role of unfit income trusts appears prominent.

Both 'unfit income trusts' and 'fit income trusts' use primarily cash to fund acquisitions followed by mixed offers. A number of 'unfit income trusts' (41.7%) and 'fit income trusts' (55.07%) issue equity around the time of the acquisition and use the proceeds to fund the acquisition almost entirely. Overall, these results suggest that the diffusion of the income trust form among high growth firms might not have been as detrimental as the detractors of income trusts have proposed. The existence of income trusts might have generated value for the Canadian economy though the consolidation of several industries.

4.8. Unfit Choices of Organizational Form and Firm Performance

I examine the post-IPO operating performance of income trusts and public corporations using two measures of performance, the natural logarithm of total sales and the operating return on assets, calculated as operating income before amortization and depreciation as a fraction of total assets (Jain and Kini, 1994).

Panel A of Table 4.13 compares operating performance of unfit and fit income trusts. Total sales and operating return on assets for unfit income trust and fit income trusts appear comparable both before and after the IPO. Total sales increase post-IPO for 'unfit income trusts' while they remain stable at their pre IPO level for 'fit income trusts.' Both types of income trusts experience a decline in operating performance post-IPO, although the decline is less pronounced in the case of 'unfit income trusts.' One possible explanation is that 'fit income trusts' could be going public at the peak of their operating performance, similar to what has been documented in previous studies of public corporations (Jain and Kini, 1994; Loughran and Ritter, 1995), while 'unfit income trusts' could be primarily driven by periods of overvaluation of income trusts relative to corporations.

Panel B of Table 4.13 compares post IPO operating performance for unfit and fit public corporations. While the mean and the median sales are higher for 'unfit public corporations,' 'fit public corporations' experience a higher increase in sales post IPO, as expected. Prior to the IPO, the operating return on assets for 'unfit public corporations' is twice the operating return on assets of 'fit public corporations,' suggesting that these firms are relatively more profitable. The differential in the operating return between the two groups of firms widens after the IPO, due to the decline in the operating return experienced by 'fit public corporations.' The finding that the operating performance for public corporations declines after the IPO is consistent with previous evidence available for US firms (Jain and Kini, 1994; Loughran and Ritter, 1995; Teoh, Welch and Wong, 1998).

Lastly, Panel C of Table 4.13 compares post IPO operating performance for 'unfit income trusts' and 'fit public corporations' pair-matched based on their propensity scores and on the year of the IPO. There is no significant difference in sales between the two groups either before or after the IPO. Despite sales increase for both groups of firms after the IPO, 'fit public corporations' exhibit a higher growth rate. The increase in sales post IPO for 'unfit income trusts,' albeit positive, is generally lower than the corresponding figure for 'fit public corporations.' After the IPO, operating performance declines for both groups of firms.

Overall these results show firms that choose to adopt payout-intensive organizational forms due to external factors might be trading away part of their growth potential when becoming income trusts.

4.9. Conclusion

This essay investigated whether investment is driven by a firm's payout policy or by its investment opportunity set. This is an important question because a firm's payout policy may not always be matched with its investment opportunity set, an example in point being high growth firms choosing high payouts due to market inefficiencies. I investigated two hypotheses regarding the impact of high payouts on investment of high growth firms. The *free cash flow hypothesis* predicts that investment of high growth firms that adopt high payouts will decline; while the *asset base hypothesis* predicts that investment of high growth firms will increase if firms finance investment and growth by returning to the capital markets.

I find support for the *asset base hypothesis*. High growth firms going public as income trusts invest and grow through acquisitions and return to the market often to raise capital. While high growth firms choosing payout-intensive forms due to market factors adjust their investment by substituting acquisitions to capital expenditures, their growth is still driven by their investment opportunity set. These results contribute to the free cash flow theory (Jensen, 1986; 1989), which makes predictions on the effect of high payouts on investment decisions under the assumption that high payouts are chosen due to fit, by analyzing the comparatively less explored case when high payouts are chosen because of market factors.

I also find preliminary evidence that income trusts might have created value for the Canadian economy by bringing several operating entities into one larger entity through acquisitions, thereby consolidating their industry. The evidence presented in this essay has relevant policy implications given the current debate on whether to change the income trust taxation plan before the phase-out planned for 2011. The possibility that the impact of income trusts on the Canadian economy might not have been as detrimental as some of the detractors have argued suggests that income trusts could be better dealt with in a way similar to how the American government dealt with the MLP in the eighties, by exempting firms whose asset base is suitable for the organizational form.

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Table 4.1: Descriptive Statistics.

This table reports descriptive statistics for firms that go public as income trusts and firms that go public as corporations in the period 1995-2005. Panel A presents statistics on the distribution of the IPOs by year. Panel B presents statistics on the distribution of the IPOs by industry.

Panel A: Income Trust IPOs and Public Corporation IPOs by Year

Year	Income Trust IPOs	Public corporation IPOs
1995	0	6
1996	3	16
1997	18	12
1998	3	11
1999	1	12
2000	0	18
2001	9	4
2002	27	3
2003	17	5
2004	23	13
2005	20	15
Total	121	115

Panel B: Income Trust IPOs and Public Corporation IPOs by Industry

Industry	Income trust	Public corporation
Mining & Energy (SIC 01-14) • Oil and gas, mining, non-metal minerals	10	18
Manufacturing (SIC 20-39) • Tobacco, textile, furniture, paper and allied products, chemical and allied products,	32	46
Transportation & Communication (SIC 40-49) • Transportation services, pipelines, communication services	30	9
Wholesale (SIC 50-51) • Durable and non-durable wholesale products	4	2
Retail trade (SIC 52-59) • Apparel and accessories stores, general merchandise stores, home furniture and automobile dealers	17	4
Finance and Real estate (SIC 60-67) • Real estate, holding and investment offices	13	15
Services (SIC 70-89) • Legal, health, engineering and accounting services, personal and business services	15	21
Total	121	115

Table 4.2: Investment for Income Trusts and Public Corporations.
The table compares investment for income trusts and corporations. Capital expenditures are measured as a fraction of the proceeds of the IPO (Capex/ $ raised) and as a fraction of operating income (Operating income/ Capex). The acquisition activity is measured by goodwill as a fraction of assets (Goodwill/ Assets). PPE is the value of a firm's property, plant and equipment recorded at cost. All dollar figures are inflation-adjusted. *Panel A* presents investment for income trust IPOs. *Panel B* presents investment for public corporations. *Panel C* tests the hypothesis of equality of yearly means and medians across the two groups. *Panel D* presents changes in investment. a, b and c indicate significance at the 10% level, 5% level and 1% level.

Panel A: Income Trusts

Year rel. to IPO	Obs.		Capex/ $ raised	Operating.income/ Capex	Operating.income/ $ raised	Dividends/ Earnings	Goodwill/ Assets	PPE	Log Assets
-1	121	Mean	0.134	10.319	0.320	0.115	0.119	161.496	18.816
		Median	0.021	3.951	0.143	0.000	0.000	42.622	18.486
+1	101	Mean	0.102	14.728	0.232	1.074	0.185	205.799	19.413
		Median	0.023	4.591	0.159	0.814	0.074	71.187	19.501
+2	75	Mean	0.111	12.101	0.268	1.114	0.165	292.228	19.609
		Median	0.035	3.277	0.167	0.803	0.045	114.242	19.592
+3	57	Mean	0.214	18.266	0.269	0.817	0.132	324.294	19.555
		Median	0.022	3.711	0.178	0.721	0.033	160.296	19.614

Panel B: Public Corporations

Year rel. to IPO	Obs.		Capex/ $ raised	Operating.income/ Capex	Operating.income/ $ raised	Dividends/ Earnings	Goodwill/ Assets	PPE	Log Assets
-1	115	Mean	0.206	5.158	0.231	0.078	0.051	100.274	18.073
		Median	0.042	1.075	0.153	0.000	0.000	13.181	17.775
+1	101	Mean	0.502	4.618	0.284	0.038	0.074	209.389	19.079
		Median	0.147	0.900	0.167	0.000	0.000	30.569	18.997
+2	80	Mean	0.593	3.468	0.342	0.025	0.069	230.135	19.057
		Median	0.127	0.570	0.149	0.000	0.000	39.151	18.887
+3	76	Mean	0.586	2.563	0.435	0.021	0.078	287.870	19.092
		Median	0.107	0.618	0.102	0.000	0.005	48.646	18.731

Panel C: T-statistics (z-statistics) for difference in means (medians): Income trusts-Public corporations

Year rel.to IPO		Capex/ \$ raised	Operating.income/ Capex	Operating.income/ \$ raised	Dividends/ Earnings	Goodwill/Assets	PPE	Log Assets
-1	Mean	-0.78	2.21^{b}	0.77	0.67	1.97^{a}	1.46	2.50^{b}
	Median	-2.91^{c}	3.88^{c}	0.59	2.45b	0.70	2.84^{c}	3.16^{c}
+1	Mean	-3.48^{c}	2.71^{c}	0.71	10.33c	4.17^{c}	-0.07	1.69^{a}
	Median	-5.33^{c}	5.28^{c}	0.36	11.98c	2.57^{c}	1.24	2.68^{c}
+2	Mean	-2.64^{b}	1.82^{a}	0.60	7.59c	3.24^{c}	0.86	2.46^{b}
	Median	-3.55^{c}	4.03^{c}	0.69	10.75c	2.27^{b}	2.04^{b}	3.22^{c}
+3	Mean	-1.40	2.31^{b}	1.12	11.88c	1.91^{a}	0.38	1.86^{b}
	Median	-2.86^{c}	4.16^{c}	1.03	9.83c	1.04	2.33^{b}	2.57^{b}

Panel D: Raw Change in Investment

		Income Trusts			Public Corporations		
		-1 to +1	-1 to +2	-1 to +3	-1 to +1	-1 to +2	-1 to +3
Capex/ \$ raised	Mean	-0.032	-0.023	0.080	0.296	0.387	0.380
	Median	0.002	0.014	0.001	0.105	0.085	0.065
t-stat/ z-stat		0.36/ 0.08	0.25/ 0.94	0.53/ 0.51	2.45^{b}/ 4.43^{c}	2.09^{b}/ 3.41^{c}	1.61/ 2.25^{b}
Op.income/ Capex	Mean	4.409	1.782	7.947	-0.540	-1.690	-2.595
	Median	0.640	-0.674	-0.240	-0.175	-0.505	-0.457
t-stat/ z-stat		1.08/ 0.74	0.35/ -0.61	1.12/ -0.06	-0.33/ -1.01	-1.08/ -1.42	-2.07^{b}/ 1.60
Op.income/ \$ raised	Mean	-0.088	-0.052	-0.051	0.053	0.093	0.204
	Median	0.016	0.024	0.035	0.014	-0.004	-0.051
t-stat/ z-stat		0.77/ 0.86	0.46/ 1.78^{a}	0.45/ 1.71^{a}	0.69/ 0.31	0.89/ 0.08	1.37/ 0.44
Dividends/ Earnings	Mean	0.959	0.999	0.702	-0.040	-0.053	-0.057
	Median	0.814	0.803	0.721	0.000	0.000	0.000
t-stat/ z-stat		9.22c/ 11.64^{c}	6.81c/ 10.89^{c}	9.41c/ 9.73^{c}	0.82/ 0.09	-1.15/ 0.64	1.28/ 0.16
Goodwill/ Assets	Mean	0.066	0.046	0.013	0.023	0.018	0.027
	Median	0.074	0.045	0.033	0.000	0.000	0.005
t-stat/ z-stat		1.79^{a}/ 3.49^{c}	1.19/ 3.08^{c}	0.35/ 2.33^{b}	2.06^{b}/ 3.61^{c}	1.44/ 3.19^{c}	0.58/ 2.43^{b}
Log Assets	Mean	0.597	0.793	0.739	1.006	0.984	1.019
	Median	1.015	1.106	1.128	1.222	1.112	0.956
t-stat/ z-stat		5.58^{c}/ 5.25^{c}	6.40^{c}/ 5.76^{c}	5.53^{c}/ 5.03^{c}	3.87^{c}/ 4.20^{c}	3.53^{c}/ 3.71^{c}	3.52^{c}/ 3.58^{c}

Table 4.3: Investment for Income Trusts pre and post Conversion.

The table presents investment measures for firms that convert from public corporations to income trusts in the period 1995-2005. *Panel A* presents investment measures by year. Capital expenditures are measured in million dollars (Capex) and as a fraction of the operating income of the firm (Operating income/ Capex). The acquisition activity undertaken by a firm is measured by the amount of goodwill as a fraction of total assets. PPE is the value of a firm's property, plant and equipment. Log Assets measures size of the firm and is defined as the natural logarithm of total assets. *Panel B* presents the mean and median changes in investment measures and the t-statistics and z-statistics for the test of significance of the changes. All dollar figures are inflation-adjusted. Accounting data is obtained from Compustat and checked with SEDAR. a, b and c indicate significance at the 10% level, 5% level and 1% level respectively.

Panel A: Income Trust Conversions

Year rel to conversion	Obs.		Operating income/ Capex	Dividends/ Earnings	Goodwill/ Assets	PPE (	Log Assets
-1	50	Mean	3.890	0.194	0.051	273.092	19.088
		Median	1.055	0.000	0.000	114.832	18.967
+1	37	Mean	2.269	0.995	0.086	311.088	19.331
		Median	1.295	0.725	0.035	230.993	19.603
+2	27	Mean	2.399	0.606	0.078	338.637	19.605
		Median	1.436	0.725	0.046	265.913	19.917
+3	19	Mean	3.097	0.827	0.090	351.352	19.709
		Median	1.923	0.830	0.055	211.353	19.961

Panel B: Change in Investment for Income Trust Conversions Always Present in the Sample

		-1 to +1	-1 to +2	-1 to +3
Operating. income/ Capex	Mean	-1.621	-1.491	-0.793
	Median	0.240	0.381	0.868
t-stat/ z-stat		-1.12/ 0.37	-1.02/ 0.89	-1.58/ 0.87
Dividends/ Earnings	Mean	0.801	0.412	0.633
	Median	0.725	0.725	0.830
t-stat/ z-stat		3.14c/ 4.84^{c}	6.73c/ 4.67^{c}	2.92c/ 4.52^{c}
Goodwill/ Assets	Mean	0.035	0.027	0.039
	Median	0.035	0.046	0.055
t-stat/ z-stat		1.51/ 2.26^{b}	1.14/ 2.62^{c}	1.45/ 2.80^{c}
Log Assets	Mean	0.243	0.517	0.621
	Median	0.636	0.950	0.994
t-stat/ z-stat		0.81/ 0.96	1.63/ 1.74^{a}	1.73^{a}/ 1.71^{a}

Table 4.4: Choice between Income trust and Public corporation Form.

The table presents the relationship between a firm's choice to go public as an income trust and firm characteristics. I use several probit models in which the dependent variable is 1 if a firm goes public as an income trust and 0 if the firm goes public as a corporation. *Log Assets* is the natural logarithm of total assets of the firm in million dollars. *Age* is number of years between the date of start of operations and the date of the IPO. *Cash outflow to Assets* ratio is the sum of operating and investing cash flow deflated by the book value of total assets. *Operating income/ Assets* is the ratio of operating income and the book value of total assets (Jain and Kini, 1994). Pseudo- R^2 is calculated as $1-[\ln L(\Omega)/\ln L(\omega)]$ where $L(\omega)$ is the likelihood function under the null hypothesis that the coefficients are zero, and $L(\Omega)$ is the likelihood function evaluated using the estimated coefficients. a, b and c indicate significance at the 10% level, 5% level and 1% level respectively.

	(1)	(2)
Intercept	-1.824^{a}	-1.770^{a}
	(0.988)	(1.065)
Log Assets	0.081	0.068
	(0.054)	(0.058)
Age	0.019^{c}	0.018^{c}
	(0.005)	(0.006)
Cash Outflow/ Assets	-0.032	-0.005
	(0.071)	(0.075)
Operating Income/ Assets	0.909^{b}	0.858^{a}
	(0.376)	0.399
Mining& Energy		-0.107
		(0.334)
Manufacturing		-0.076
		(0.264)
Transportation & Communication		0.856^{c}
		(0.317)
Wholesale		0.799
		(0.607)
Retail trade		0.915^{b}
		(0.385)
Real Estate		0.017
		(0.337)
Pseudo-R^2 (%)	15.07	25.67
Obs.	236	236

Table 4.5: Effect of Firm Characteristics and Payout Policy on Investment.

The table presents logit results measuring the effect of the choice of a policy of high and mandatory payouts on capital expenditures and acquisition activity of newly listed firms. The dependent variables are cumulative capital expenditures as a fraction of total amount raised in the IPO in specification (1) and cumulative goodwill as a fraction of total assets at the fiscal year-end prior to the IPO in specification (2). The independent variables are the size of the firm, measured by the natural logarithm of total assets at the fiscal year-end prior to the IPO, the age of the firm, measured by the number of years from the date of start of operations to the date of the IPO, the inverse mills ratio (IMR) obtained from model 2 in Table 4, correcting for the self-selection problem in the choice of between income trust and public corporation. Specification 2 in the table is estimated with industry dummies (coefficients not reported). a, b and c indicate significance at the 10% level, 5% level and 1% level respectively.

			Intercept		Log Assets		Age		IMR		
Dependent	t	N	β_o	*t-stat*	β_1	*t-stat*	β_2	*t-stat*	β_4	*t-stat*	R^2
(1) $\sum_{i=1}^{t} Capex_i / Raised$	1	202	-1.048	-1.42	0.076^a	1.89	-0.007	-1.15	-0.372^c	-3.21	9.95
	2	202	-1.872	-1.15	0.142	1.60	-0.017	-1.29	-0.687^c	-2.68	7.65
	3	202	-2.918	-1.17	0.216	1.59	-0.026	-1.32	-1.157^c	-2.96	8.68
(2) $\sum_{i=1}^{t} Goodwill_i / Assets$	1	202	1.893^c	2.83	-0.083^b	-2.28	0.000	0.10	0.215^b	2.56	5.70
	2	202	2.980^c	2.92	-0.126^b	-2.27	-0.002	-0.36	0.279^b	2.19	5.10
	3	202	5.034^c	2.97	-0.218^b	-2.36	-0.005	-0.53	0.248	1.17	3.85

Table 4.6: Investment for Fit and Unfit Income Trusts.

The table compares investment for firms that go public as income trusts despite having a low propensity to become income trusts ('Unfit income trusts') and firms that go public as income trusts and present a high propensity to become income trusts ('Fit income trusts'). The cut-off for low propensity is 48%. Age is the number of years between the start of operations and the IPO. Capital expenditures are measured as a fraction of the proceeds of the IPO (Capex/ $ raised), and as a fraction of the operating income (Operating income/ Capex). The acquisition activity undertaken by a firm is measured by goodwill as a fraction of total assets (Goodwill/ Assets). PPE is the value of a firm's property, plant and equipment recorded at cost. Year -1 is the year prior to the IPO. All dollar figures are inflation-adjusted. a, b and c indicate significance at the 10% level, 5% level and 1% level respectively.

Panel A: Unfit Income Trusts

Year Rel to IPO	Obs.		Age	Capex/ $ Raised	Operating income/ Capex	Operating income/ $ raised	Dividends/ Earnings	Goodwill/ Assets	PPE (million)	Log Assets
-1	39	Mean	7.051	0.066	8.830	0.111	0.087	0.135	148.958	18.687
		Median	6.000	0.037	4.786	0.089	0.000	0.000	55.989	18.531
+1	31	Mean		0.068	9.487	0.217	0.910	0.270	233.887	19.496
		Median		0.024	5.285	0.121	0.821	0.249	87.164	19.409
+2	24	Mean		0.085	7.193	0.218	0.795	0.288	329.617	19.578
		Median		0.058	2.959	0.149	0.810	0.395	103.993	19.452
+3	20	Mean		0.086	7.558	0.303	0.697	0.244	362.289	19.631
		Median		0.033	3.712	0.173	0.688	0.239	160.296	19.767

Panel B: Fit Income Trusts

Year relative to IPO	Obs.		Age	Capex/ $ Raised	Operating income/ Capex	Operating income/ $ raised	Dividends/ Earnings	Goodwill/ Assets	PPE (million)	Log Assets
-1	82	Mean	24.109	0.033	11.028	0.041	0.128	0.087	167.459	18.586
		Median	23.000	0.014	3.598	0.000	0.000	0.000	35.914	18.360
+1	70	Mean		0.040	17.194	0.095	1.155	0.156	192.581	19.373
		Median		0.013	4.231	0.000	0.798	0.064	57.783	19.514
+2	48	Mean		0.062	14.770	0.140	1.300	0.133	274.634	19.623
		Median		0.019	3.038	0.075	0.824	0.042	142.911	19.598
+3	35	Mean		0.082	23.910	0.158	0.877	0.097	308.146	19.522
		Median		0.021	3.637	0.071	0.806	0.003	164.768	19.590

Panel C: T-statistics (z-statistics) for difference in means (medians): Unfit vs. Fit Income Trusts

Fiscal year relative to IPO		Age	Capex/ $raised	Operating income/ Capex	Operating income/ $ raised	Dividends/ Earnings	Goodwill/ Assets	PPE	Log Assets
-1	Mean	-7.59^{c}	182a	-0.64	0.17	0.69	0.96	-0.34	0.44
	Median	-5.08^{c}	1.65a	0.46	0.29	0.69	2.53^{b}	1.13	0.61
+1	Mean		1.77	-1.40	1.13	1.30	2.08^{b}	0.65	0.64
	Median		1.76^{a}	0.58	0.73	0.56	1.74^{a}	1.45	-0.62
+2	Mean		1.19	-1.02	0.97	2.19b	2.22^{b}	0.58	-0.19
	Median		1.02	0.46	0.04	0.77	1.80^{a}	-0.70	-0.12
+3	Mean		0.08	-1.59	0.94	1.40	2.24^{b}	0.50	0.39
	Median		0.64	0.38	-0.41	0.92	2.36^{b}	-0.65	0.36

Panel D: Raw Change in Investment

		Unfit income trusts			Fit income trusts		
		-1 to +1	-1 to +2	-1 to +3	-1 to +1	-1 to +2	-1 to +3
Capex/ $raised	Mean	0.114	0.043	0.020	-0.007	0.032	0.049
	Median	-0.004	0.040	-0.004	-0.003	0.003	0.005
t-stat/ z-stat		1.42/ 0.50	1.06/ 0.62	0.41/ -0.03	-0.48/ -0.04	1.53/ 0.93	1.47/ 0.73
Op income/ Capex	Mean	0.657	-1.637	-1.272	6.166	3.742	12.882
	Median	1.524	-1.827	-1.074	0.633	-0.560	0.039
t-stat/ z-stat		0.24/ 0.47	-0.61/ -0.32	-0.42/ -0.02	1.05/ 0.54	0.48/ -0.55	1.23/ 0.02
Op income/ $ raised	Mean	0.212	0.256	0.745	0.054	0.099	0.117
	Median	0.000	0.032	0.000	0.000	0.075	0.071
t-stat/ z-stat		0.90/ 1.02	0.65/ 1.18	0.96/ 0.90	0.46/ 0.96	0.28/ 2.21^{b}	0.54/ 2.37^{b}
Dividends/ Earnings	Mean	0.823	0.708	0.610	1.027	1.172	0.749
	Median	0.821	0.810	0.688	0.798	0.824	0.806
t-stat/ z-stat		5.38c/ 6.74^{c}	9.30c/ 6.45^{c}	6.27c/ 5.55^{c}	7.42c/ 9.43^{c}	5.21c/ 8.57^{c}	7.30c/ 7.28^{c}
Goodwill/ Assets	Mean	0.135	0.153	0.109	0.069	0.046	0.010
	Median	0.249	0.395	0.239	0.064	0.042	0.003
t-stat/ z-stat		2.30^{b}/ 1.92^{a}	2.11^{b}/ 1.91^{a}	1.73^{a}/ 1.77^{a}	1.54/ 3.73^{c}	1.07/ 3.24^{c}	0.28/ 2/43^{c}
Log Assets	Mean	0.809	0.891	0.944	0.787	1.037	0.936
	Median	0.878	0.921	1.236	1.154	1.238	1.230
t-stat/ z-stat		3.26^{c}/ 2.94c	3.23^{c}/ 2.91^{c}	2.95^{c}/ 2.67^{c}	4.47^{c}/ 4.35^{c}	5.41^{c}/ 4.95^{c}	4.59^{c}/ 4.23^{c}

Table 4.7: Investment for Fit and Unfit Public Corporations.

The table compares investment for firms that go public as corporations despite having a high propensity to become income trusts ('Unfit public corporations') and a sample of firms with high propensity to go public as corporations that become public corporations ('Fit public corporations'). The cut-off for high propensity is 48%. Age is the number of years between the start of operations and the IPO. Capital expenditures are measured as a fraction of the capital raised at the IPO (Capex/ $ raised) and as a fraction of operating income (Operating income/ capex). The acquisition activity undertaken by a firm is measured by goodwill as a fraction of total assets (Goodwill/ Assets). PPE is the value of a firm's property, plant and equipment recorded at cost. Log Assets is the natural logarithm of total assets. Year -1 is the year prior to the one of the IPO. All dollar figures are inflation-adjusted. a, b and c indicate significance at the 10% level, 5% level and 1% level respectively.

Panel A: Unfit Public Corporations

Year relative to IPO	Obs.		Age	Capex/ $ raised	Operating income/ Capex	Operating income/ $ raised	Dividends/ Earnings	Goodwill/ Assets	PPE (million)	Log Assets
-1	31	Mean	20.322	0.347	2.355	0.676	0.077	0.061	147.406	18.919
		Median	17.000	0.097	1.232	0.448	0.000	0.000	66.961	18.880
+1	28	Mean		0.362	2.694	0.645	0.035	0.106	275.723	19.711
		Median		0.207	1.621	0.525	0.000	0.016	132.833	19.533
+2	23	Mean		0.360	2.310	0.839	0.011	0.091	254.036	19.634
		Median		0.181	1.780	0.612	0.000	0.008	135.032	19.587
+3	23	Mean		0.346	2.875	0.971	0.015	0.114	301.321	19.760
		Median		0.196	1.986	0.600	0.000	0.043	164.220	19.890

Panel B: Fit Public Corporations

Year relative to IPO	Obs.		Age	Capex/ $raised	Operating income/ capex	Operating income/ $ raised	Dividends/ Earnings	Goodwill/ Assets	PPE (million)	Log Assets
-1	84	Mean	6.298	0.142	2.133	0.185	0.081	0.048	37.362	17.566
		Median	5.000	0.036	0.311	0.072	0.000	0.000	7.296	17.603
+1	73	Mean		0.412	1.421	0.389	0.049	0.063	90.424	18.662
		Median		0.113	0.000	0.037	0.000	0.000	16.569	18.449
+2	57	Mean		0.522	1.550	0.432	0.067	0.062	85.100	18.591
		Median		0.088	0.000	0.025	0.000	0.000	16.986	18.282
+3	53	Mean		0.251	1.737	0.438	0.036	0.063	86.765	18.553
		Median		0.086	0.000	0.000	0.000	0.000	23.010	18.282

Panel C: T-statistics (z-statistics) for difference in means (medians): Unfit vs. Fit Public Corporations

Year relative to IPO		Age	Capex/ $raised	Operating income/ capex	Operating income/ $ raised	Dividends/ Earnings	Goodwill/ Assets	PPE (million)	Log Assets
-1	Mean	3.87^{c}	1.21	0.31	2.72^{b}	0.05	0.45	2.54^{b}	3.69^{c}
	Median	3.54^{c}	1.75^{a}	1.16	3.32^{c}	1.78^{a}	0.56	3.48^{c}	3.30^{c}
+1	Mean		-0.33	1.55	1.82^{a}	0.42	1.15	2.22^{b}	3.04^{c}
	Median		1.71^{a}	3.07^{c}	2.16^{b}	2.12^{b}	1.88^{a}	3.90^{c}	2.87^{c}
+2	Mean		-0.69	1.23	1.99^{a}	1.29	0.88	2.47^{b}	2.91^{c}
	Median		2.11^{b}	2.89^{c}	2.27^{b}	1.94^{a}	1.58	4.00^{c}	2.79^{c}
+3	Mean		-0.71	1.29	1.63	1.31	1.31	2.73^{b}	3.12^{c}
	Median		2.34^{b}	2.57^{b}	2.35^{b}	1.99^{b}	1.97^{b}	3.84^{c}	3.06^{c}

Panel D: Raw Change in Investment

		Unfit public corporations			Fit public corporations		
		-1 to +1	-1 to +2	-1 to +3	-1 to +1	-1 to +2	-1 to +3
Capex/ $raised	Mean	0.015	0.013	-0.003	0.270	0.380	0.109
	Median	0.110	0.084	0.099	0.077	0.052	0.050
t-stat/ z-stat		0.08/ 1.98^{b}	0.07/ 2.04^{b}	0.01/ 1.83^{a}	2.18^{b}/ 3.91^{c}	1.77^{a}/ 2.74^{c}	1.39/ 1.42
Operating income/ capex	Mean	0.339	-0.045	0.520	-0.712	-0.580	-0.396
	Median	0.389	0.548	0.754	-0.311	-0.311	-0.311
t-stat/ z-stat		0.38/ 0.61	0.06/ 0.72	0.63/0.68	1.40/ 1.01	0.99/ 1.21	0.63/ 0.95
Operating income/ $ raised	Mean	-0.031	0.163	0.295	0.204	0.247	0.253
	Median	0.077	0.164	0.152	-0.035	-0.047	-0.072
t-stat/ z-stat		0.14/ 0.47	0.59/ 0.72	0.84/ 0.57	2.78^{c}/ 0.89	2.42^{b}/ 0.35	1.96^{a}/ 0.41
Dividends/ Earnings	Mean	-0.042	-0.066	-0.062	-0.032	-0.014	-0.045
	Median	0.000	0.000	0.000	0.000	0.000	0.000
t-stat/ z-stat		0.67/ 0.04	1.14/ 0.56	1.06/ 0.09	0.62/ 0.17	0.23/ 0.06	0.93/ 0.23
Goodwill/ Assets	Mean	0.045	0.030	0.053	0.015	0.014	0.015
	Median	0.016	0.008	0.043	0.000	0.000	0.000
t-stat/ z-stat		1.00/ 2.28^{b}	0.67/ 1.98^{b}	1.17/ 2.61^{c}	0.83/ 1.58	0.75/ 1.28	0.85/ 1.49
Log Assets	Mean	0.792	0.715	0.841	1.096	1.025	0.987
	Median	0.653	0.707	1.010	0.846	0.679	0.679
t-stat/ z-stat		1.81^{a}/ 1.94^{a}	1.60/ 1.76^{a}	1.86^{a}/ 1.90^{a}	4.25^{c}/ 4.09^{c}	3.74^{c}/ 3.55^{c}	3.54^{c}/ 3.17^{c}

Table 4.8: Investment for Unfit Income trusts and Fit Public Corporations.

The table compares investment for firms that go public as income trusts despite having a low propensity to become income trusts ('Unfit income trusts') and a match-paired sample of firms that go public as corporations and present a low propensity to become income trusts ('Fit public corporations'). The cut-off for low propensity is 48%. Age is the number of years between the start of operations and the IPO. Capital expenditures are measured as a fraction of the capital raised at the IPO (Capex/ $ raised) and as a fraction of the operating income (Operating income/ capex). The acquisition activity by a firm is measured by goodwill as a fraction of total assets (Goodwill/ Assets). PPE is the value of a firm's property, plant and equipment recorded at cost. All dollar figures are inflation-adjusted. a, b and c indicate significance at the 10% level, 5% level and 1% level.

Panel A: Unfit Income Trusts

Year relative to IPO	Obs.		Age	Capex/ $ raised	Operating income/ capex	Operating income/ $ raised	Dividends/ Earnings	Goodwill/ Assets	PPE (million)	Log Assets
-1	39	Mean	7.051	0.066	8.830	0.138	0.087	0.135	148.958	18.687
		Median	6.000	0.037	4.786	0.000	0.000	0.000	55.989	18.531
+1	31	Mean		0.180	9.486	0.122	0.910	0.270	226.812	19.439
		Median		0.033	5.285	0.000	0.821	0.287	77.228	19.297
+2	24	Mean		0.109	7.193	0.133	0.795	0.288	329.617	19.578
		Median		0.077	2.959	0.000	0.810	0.395	103.993	19.452
+3	20	Mean		0.086	7.558	0.106	0.697	0.244	362.289	19.543
		Median		0.033	3.712	0.000	0.688	0.239	160.259	19.586

Panel B: Fit Public Corporations

Year relative to IPO	Obs.		Age	Capex/ $ raised	Operating income/ capex	Operating income/ $ raised	Dividends/ Earnings	Goodwill/ Assets	PPE (million)	Log Assets
-1	39	Mean	7.256	0.185	5.059	0.313	0.150	0.064	78.338	18.366
		Median	6.000	0.046	1.847	0.230	0.000	0.000	13.239	18.504
+1	34	Mean		0.489	2.745	0.672	0.076	0.095	191.826	19.278
		Median		0.154	0.961	0.449	0.000	0.003	26.536	19.169
+2	26	Mean		0.761	3.825	0.844	0.027	0.102	177.885	19.207
		Median		0.147	0.720	0.491	0.000	0.000	29.301	19.552
+3	24	Mean		0.384	3.297	0.735	0.035	0.098	226.116	19.141
		Median		0.144	1.590	0.308	0.000	0.018	41.576	18.689

Panel C: T-statistics (z-statistics) for difference in means (medians): Unfit Income trusts vs. Fit Public Corporations

Year relative to IPO		Age	Capex/ $ raised	Operating income/ Capex	Operating income/ $ raised	Dividends/ Earnings	Goodwill/ Assets	PPE (million)	Log Assets
-1	Mean	0.17	1.71^{a}	1.82^{a}	-2.05^{b}	0.49	1.90^{a}	1.48	1.03
	Median	0.00	-0.70	1.59	-4.53^{c}	0.43	1.10	3.03^{c}	1.06
+1	Mean		-1.90^{a}	2.97^{c}	-4.31^{c}	5.72^{c}	3.31^{c}	0.41	0.54
	Median		-1.92^{a}	3.68^{c}	-3.95^{c}	6.57^{c}	2.24^{b}	1.98^{b}	0.80
+2	Mean		-1.77^{a}	1.50	-3.40^{c}	11.32^{c}	2.47^{b}	1.37	0.98
	Median		-1.66^{a}	2.11^{b}	-2.98^{c}	6.07^{c}	2.12^{b}	1.93^{b}	1.18
+3	Mean		-2.26^{b}	1.76^{a}	2.48^{b}	7.18^{c}	2.13^{b}	0.83	0.86
	Median		-1.74^{a}	2.33^{b}	-2.13^{b}	4.98^{c}	1.92^{a}	2.33^{b}	1.07

Panel D: Raw Change in Investment

	Unfit Income trusts			Fit Public Corporations		
	-1 to +1	-1 to +2	-1 to +3	-1 to +1	-1 to +2	-1 to +3
Capex/ $ raised	0.114	0.043	0.020	0.304	0.576	0.199
	-0.004	0.040	-0.004	0.108	0.101	0.098
t-stat/ z-stat	1.42/ -0.50	1.06/ 0.62	0.41/ -0.03	1.93^{a}/ 2.58^{b}	1.54/ 2.27^{b}	1.54/ 1.93^{a}
Operating income/ capex	0.656	-1.637	-1.272	-2.314	-1.234	-1.762
	0.499	-1.827	-1.074	-0.886	-1.127	-0.257
t-stat/ z-stat	0.24/ 0.47	-0.61/ -0.32	-0.42/ -0.02	-1.67a/ -1.38	-0.72/ 0.97	-1.04/ -0.82
Operating income/ $ raised	-0.016	0.255	-0.032	0.359	0.531	0.422
	0.000	-0.005	0.000	0.219	0.261	0.078
t-stat/ z-stat	0.20/ 0.57	0.07/ 0.77	0.29/ 0.36	2.91^{c}/ 1.47	2.52^{b}/ 1.58	1.65/ 0.14
Dividends/ Earnings	0.823	0.708	0.610	-0.074	-0.123	-0.115
	0.821	0.810	0.688	0.000	0.000	0.000
t-stat/ z-stat	5.38c/ 6.74^{c}	9.30c/ 6.45^{c}	6.27c/ 5.55^{c}	-0.56/ 0.23	-1.01/ 0.06	-0.93/ 0.17
Goodwill/ Assets	0.135	0.153	0.109	0.031	0.038	0.034
	0.287	0.395	0.239	0.003	0.000	0.018
t-stat/ z-stat	2.41^{b}/ 2.05^{b}	2.11^{b}/ 1.91^{a}	1.73^{a}/ 1.77^{a}	0.98/ 1.07	0.90/ 0.09	1.01/ 1.38
Log Assets	0.752	0.891	0.856	0.912	0.841	0.775
	0.766	0.921	1.055	0.665	1.048	0.185
t-stat/ z-stat	3.08^{c}/ 2.78^{c}	3.23^{c}/ 2.91^{c}	2.63^{c}/ 2.42^{b}	2.52^{b}/ 2.36^{b}	2.04^{b}/ 1.95^{a}	1.71^{a}/ 1.24

Table 4.9: SEOs for Income Trusts and Public Corporations.

The table compares seasoned equity offerings (SEOs) for firms that go public as income trusts and firms that go public as corporations in the three years after the IPO. *Panel A* presents the total number of SEOs undertaken and the number of SEOs where purpose of the offering is stated as either 'Acquisition' or 'Capital Expenditures.' *Panel B* compares the offering characteristics for income trusts and public corporations. All dollar figures are inflation-adjusted. Data on offering characteristics is from Financial Post New Issues database. a, b and c indicate significance at the 10% level, 5% level and 1% level respectively.

Panel A: Number of SEOs and Use of proceeds

	Obs. with SEO	Income trusts (N=121)	Obs. with SEO	Public corporations (N=114)
Total Number of SEOs	50	92	33	52
Stated purpose: Acquisition	50	62	33	3
Stated purpose: Capex	50	0	33	10
Other purposes	50	30	33	39

Panel B: Offering Characteristics

		# SEOs	Income trusts (N= 121)	# SEOs	Public corporations (N=114)	t-test z-test
Gross Proceeds (million)	Mean	92	142.248	52	214.858	-1.54
	Median		78.016		98.617	-1.02
Capital Raised (million)	Mean	92	106.778	52	123.412	-0.44
	Median		64.325		49.461	1.59
Capital raised for Acquisition	Mean	92	91.480	52	14.824	3.80^{c}
	Median		47.584		0.00	6.35^{c}
Capital raised for capex	Mean	92	0.000	52	50.148	2.06^{b}
	Median		0.000		0.00	4.34^{c}

Table 4.10: SEOs for Unfit and Fit Choices

The table compares seasoned equity offerings for fit and unfit choices *Panel A* compares total number of SEOs and number of SEOs whose purpose is "Acquisition" or "Capital Expenditures". *Panel B* compares offering characteristics for 'Fit income trusts' vs. 'Unfit income trusts' and 'Unfit Public corporations' vs. 'Fit public corporations'. All dollar figures are inflation-adjusted. a, b and c indicate significance at 10%, 5% and 1% .

Panel A: SEO Activity for Unfit and Fit Choices

	Obs. with SEO	Unfit Income trusts (N=39)	Obs. with SEO	Fit Income trusts (N=82)
Total number of SEOs	16	35	34	57
Stated purpose Acquisition	16	28	34	36
Stated purpose Capex	16	0	34	0
Other Purpose	16	7	34	21
	Obs. with SEO	Unfit Public corporations (N=32)	Obs. with SEO	Fit Public corporations (N=83)
Total number of SEOs	12	19	21	33
Stated purpose Acquisition	12	2	21	1
Stated purpose Capex	12	2	21	8
Other Purpose	12	15	21	24

Table 4.10 Continued:

Panel B: Offering Characteristics for Unfit and Fit Choices

		# SEOs	Unfit Income Trusts (N=39)	# SEOs	Fit Income trusts (N=82)	t-test z-test
Gross Proceeds	Mean	35	104.426	56	165.472	-1.40
	Median		75.234		78.371	-0.48
Capital Raised	Mean	35	104.257	56	108.327	-0.13
	Median		75.324		64.216	0.96
Secondary component	Mean	35	0.000	56	4.884	-1.92[a]
	Median		0.000		0.000	2.88[c]
Capital raised for Acquisition	Mean	35	91.542	56	91.441	-0.01
	Median		51.833		45.274	1.65[a]
Capital raised for Capex	Mean	35	0.000	56	0.000	-
	Median		0.000		0.000	

		# SEOs	Unfit public corporations (N=32)	# SEOs	Fit public corporations N=83)	t-test z-test
Gross Proceeds	Mean	19	140.881	33	76.653	2.33[b]
	Median		127.185		57.848	2.23[b]
Capital Raised	Mean	19	92.191	33	59.184	1.05
	Median		40.002		53.446	-0.22
Secondary component	Mean	19	8.637	33	0.692	2.65[b]
	Median		2.443		0.000	3.02[c]
Capital raised for Acquisition	Mean	19	31.784	33	5.058	1.18
	Median		0.000		0.000	0.64
Capital raised for Capex	Mean	19	13.915	33	71.009	-1.44
	Median		0.000		0.000	1.26

Table 4.11: SEOs for Unfit Income Trusts and Fit Corporations

The table compares seasoned equity offerings (SEOs) for 'Unfit income trusts' vs. 'Fit public corporations' in the three years after the IPO. *Panel A* compares the total number of SEOs undertaken and the number of SEOs where purpose of the offering is stated as either 'Acquisition' or 'Capital Expenditure' across the two groups. *Panel B* compares the offering characteristics for 'Unfit income trusts' and a pair-matched sample of 'Fit public corporations'. All dollar figures are inflation-adjusted. a, b and c indicate significance at 10% level, 5% level and 1% level.

Panel A: Descriptive Statistics

	Obs. with SEO	Unfit Income trusts (N=39)	Obs. with SEO	Fit Public corporations (N=39)
Total Number of SEOs	16	35	9	15
Stated purpose Acquisitions	16	28	9	2
Stated purpose Capex	16	0	9	8
Other purpose	16	7	9	5

Panel B: Unfit Income trusts vs. Fit Public corporations

		# SEOs	Unfit Income Trusts (N=39)	# SEOs	Fit public Corporations (N=39)	t-test z-test
Gross Proceeds	Mean	35	104.426	15	87.199	0.62
	Median		75.234		63.458	0.10
Capital Raised	Mean	35	104.257	15	54.699	2.69^{b}
	Median		75.234		53.446	1.21
Secondary component	Mean	35	0.000	15	1.051	-1.87^{a}
	Median		0.000		0.000	-3.13^{c}
Capital raised for Acquisitions	Mean	35	91.542	15	11.128	4.63^{c}
	Median		51.833		0.000	3.86^{c}
Capital raised for Capex	Mean	35	0.000	15	29.562	-2.67^{b}
	Median		0.000		0.000	-4.15^{c}

Table 4.12: Income Trusts Acquisitions and Industry Consolidation

The table presents various measures of acquisition activity. *Number of acquisitions* is acquisitions completed the year prior and the three years after the IPO. *Canadian target* is acquisitions where the target is a Canadian firm. *Same industry target* is acquisitions where the target is in the same industry as the acquirer. *Canadian firm in the same industry* is the number of acquisitions where the target is Canadian and operates in the same industry as the acquirer. *Cash only acquisitions*, *stock acquisitions* and *mixed acquisitions* is the number of acquisitions where the mean of payment is cash, stocks or any other security of combination of securities. *Cash acquisition and equity offer* are acquisitions financed issuing equity. *Panel A* compares acquisition characteristics for income trusts and for public corporations. *Panel B* compares acquisition measures for income trusts and public corporations. *Panel C* compares acquisition characteristics for unfit income trusts and for unfit income trusts. *Panel D* compares acquisition measures for unfit income trusts and fit income trusts.

Panel A: Acquisition Activity for Income Trusts and Public Corporations

	Obs. with Acquisitions	Income Trusts (N=121)	Obs. with Acquisitions	Public Corporations (N=114)
Number of Acquisitions	45	277	55	85
Canadian Target	45	255	55	63
Same industry target	45	252	55	67
Canadian target in same industry	45	232	55	54
Cash only acquisition	45	196	55	26
Cash acquisition + equity offer	45	92	55	2
Stock acquisition	45	4	55	4
'Mixed' acquisition	45	77	55	55

Panel B: Acquisition Activity for Income Trusts and Public Corporations

	Obs.	Income Trusts	Obs.	Public Corporations	T-test/ Z-test
Number of Acquisitions	354	0.782	371	0.229	8.79^{c}/
		0.000		0.000	7.30^{c}
Canadian Target	354	0.692	371	0.170	11.68^{c}/
		0.000		0.000	7.73^{c}
Same industry target	354	1.868	371	1.241	7.48^{c}/
		1.000		1.000	1.38
Canadian target in same industry	354	0.655	371	0.145	13.03^{c}/
		0.000		0.000	7.84^{c}
Cash only acquisition	354	1.431	371	0.472	4.33^{c}/
		1.000		0.000	4.84^{c}
Cash acquisition + equity offer	354	0.669	371	0.036	5.60^{c}/
		0.000		0.000	5.15^{c}
Stock only acquisition	354	0.029	371	0.073	1.10/
		0.000		0.000	1.67^{a}
'Mixed' acquisition	354	0.562	371	1.018	2.39^{b}/
		0.000		1.000	5.08^{c}

Panel C: Acquisition Activity for Unfit Income Trusts and Fit Income Trusts

	Obs. with Acquisitions	Unfit Income Trusts (N=39)	Obs. with Acquisitions	Fit Income Trusts (N=82)
Number of Acquisitions	37	191	43	86
Canadian Target	37	169	43	77
Same industry target	37	180	43	72
Canadian target in same industry	37	165	43	67
'Cash only' acquisition	37	127	43	69
Cash acquisition + equity offer	37	53	43	38
'Stock only' acquisition	37	2	43	2
'Mixed' acquisition	37	62	43	15

Panel D: Acquisition Activity for Unfit Income Trusts and Fit Income Trusts

	Obs.	Unfit Income Trusts	Obs.	Fit Income Trusts	T-test/ Z-test
Number of Acquisitions	113	1.690 1.000	241	0.356 0.000	4.49^c/ 7.22^c
Canadian Target	113	1.486 1.000	241	0.319 0.000	4.04^c/ 6.35^c
Same industry target	113	2.535 1.000	241	1.151 1.000	3.12^c/ 4.00^c
Canadian target in same industry	113	1.460 1.000	241	0.278 0.000	4.10^c/ 6.73^c
'Cash only' acquisition	113	1.788 1.000	241	1.045 1.000	1.89a/ 1.01
Cash acquisition + equity offer	113	0.746 0.000	241	0.584 0.000	0.75/ 0.21
'Stock only' acquisition	113	0.028 0.000	241	0.030 0.000	-0.06/ 0.49
'Mixed' acquisition	113	0.873 0.000	241	0.227 0.000	2.48^b/ 2.57^c

Table 4.13: Operating Performance post IPO

The table presents measures of operating performance. *Log sales* is the natural logarithm of total sales. *Operating return on assets* is operating income before amortization and depreciation as a fraction of assets. *Panel A* compares operating performance for 'Unfit income trusts' and 'Fit income trusts'. *Panel B* compares operating performance for 'Unfit public corporations' and 'Fit public corporations.' *Panel C* compares operating performance for 'Unfit income trusts' and 'Fit public corporations'. All dollar figures are inflation-adjusted. a, b and c indicate significance at 10%, 5% and 1% level.

Panel A: Unfit vs. Fit Income Trusts

			Fiscal year relative to IPO				Raw change		
			-1	+1	+2	+3	-1;+1	-1;+2	-1:+3
Log sales	Unfit income	Mean	18.141	18.571	18.700	18.803	0.430^{a}	0.559^{b}	0.605^{b}
	Trusts	Median	18.175	18.763	18.819	18.829	0.588^{a}	0.644^{a}	0.624^{a}
	Fit income trusts	Mean	18.251	18.157	18.318	18.320	-0.094	0.067	0.069
		Median	18.315	18.324	18.401	18.466	0.009	0.086	0.151
	t-stat/z-stat		0.23/ 0.47	1.79^{a}/ 1.21	0.91/ 0.71	1.27/ 1.26			
Operating return	Unfit income	Mean	0.154	0.100	0.101	0.107	-0.054^{c}	-0.053^{c}	-0.047^{a}
on assets	Trusts	Median	0.145	0.100	0.097	0.092	-0.045^{b}	-0.048^{b}	-0.053^{a}
	Fit income trusts	Mean	0.168	0.088	0.083	0.092	-0.080^{c}	-0.085^{c}	-0.076^{c}
		Median	0.148	0.084	0.078	0.089	-0.064^{c}	-0.070^{c}	-0.059^{c}
	t-stat/z-stat		0.62/ 0.32	0.77/ 1.19	1.55/ 1.71^{a}	0.86/ 0.35			

Panel B: Unfit vs. Fit Public Corporations

			Fiscal year relative to IPO				Raw change		
			-1	+1	+2	+3	-1;+1	-1;+2	-1:+3
Log sales	Unfit public	Mean	19.044	19.561	19.652	19.740	0.517	0.789	0.696^{a}
	corporations	Median	18.804	19.544	19.659	19.848	0.740	0.855^{a}	1.044^{b}
	Fit public	Mean	16.997	17.658	17.729	17.771	0.661^{a}	0.732^{a}	0.774^{b}
	corporations	Median	16.958	17.662	18.071	17.718	0.704^{a}	1.113^{a}	0.760^{a}
	t-stat/z-stat		5.42^{c}/ 4.42^{c}	5.19^{c}/ 4.17^{c}	4.66^{c}/ 3.79^{c}	4.63^{c}/ 3.78^{c}			
Operating return	Unfit public	Mean	0.165	0.130	0.146	0.125	-0.035	-0.019	-0.040
on assets	corporations	Median	0.153	0.124	0.152	0.125	-0.029	-0.001	-0.028
	Fit public	Mean	0.091	0.028	0.020	0.024	-0.063^{b}	-0.071^{c}	-0.067^{c}
	corporations	Median	0.071	0.043	0.065	0.042	-0.028^{b}	-0.006^{b}	-0.029^{b}
	t-stat/z-stat		2.05^{b}/ 1.83^{a}	3.20^{c}/ 3.17^{c}	3.70^{c}/ 3.33^{c}	3.33^{c}/ 2.82			

Panel C: Unfit Income Trusts vs. Fit Public Corporations Pair-matched

			Fiscal year relative to IPO				Raw change		
			-1	+1	+2	+3	-1;+1	-1;+2	-1:+3
Log sales	Unfit Income Trusts	Mean	18.141	18.571	18.700	18.803	0.430^{a}	0.559^{b}	0.605^{b}
		Median	18.175	18.763	18.819	18.829	0.588^{a}	0.644^{a}	0.624^{a}
	Fit public corporations	Mean	17.681	18.732	18.608	18.717	0.527^{b}	0.927^{a}	0.795^{b}
		Median	17.969	18.456	18.778	18.679	0.440^{b}	0.809^{b}	0.710^{a}
	t-stat/z-stat		1.58/ 1.36	0.48/ 0.33	-0.02/ 0.26	0.03/ 0.17			
Operating return on assets	Unfit Income Trusts	Mean	0.154	0.100	0.101	0.107	-0.054^{c}	-0.053^{c}	-0.047^{a}
		Median	0.145	0.100	0.097	0.092	-0.045^{b}	-0.048^{b}	-0.053^{a}
	Fit public corporations	Mean	0.133	0.073	0.060	0.030	-0.039^{a}	-0.073^{b}	-0.103^{b}
		Median	0.139	0.066	0.090	0.068	-0.073^{b}	-0.049^{a}	-0.071^{b}
	t-stat/z-stat		0.46/ -0.54	1.04/ 1.13	1.53/ 0.67	1.89^{a}/ 1.08			

Figure 4.1: Fit and Unfit Choices of Organizational Form.

The figure illustrates the definition of fit and unfit choices of organizational form. The choice of the income trust form or the public corporation form are defined as fit or unfit based on a firm's propensity score and the choice made. A propensity score of 50% is chosen as the cut-off between low and high propensity. Firms with propensity score higher (lower) than 50% which choose to become income trusts are classified as 'fit income trusts' ('unfit income trusts'). Firms with propensity score higher (lower) than 50% which choose to become public corporations are classified as 'unfit public corporations' ('fit public corporations').

	CHOICE MADE	
PROPENSITY SCORE	INCOME TRUST	PUBLIC CORPORATION
HIGH	FIT INCOME TRUSTS	UNFIT PUBLIC CORPORATIONS
LOW	UNFIT INCOME TRUSTS	FIT PUBLIC CORPORATIONS

Chapter 5

Summary and Conclusions

This dissertation investigated three questions related to the diffusion of the alternative organizational form of income trusts in Canada. Chapter 2 examined the evolution of the market for new lists in Canada from 1971 to 2005 in order to study the effect of the diffusion of the income trust form on the characteristics of newly listed firms. I documented an increase in the number and size of newly listed firms after 1980. These results are consistent with evidence available for the US (Fama and French, 2003; 2004). I also documented a marked decline in the profitability of new lists in the recent years, likely caused by revisions of the listing requirements aimed at facilitating access to the capital markets by firms still at the research and development stage. I interpret this result as consistent with listing requirement being a key mechanism by which weak firms are discouraged from listing. However, it does not appear that income trusts attract old and profitable firms that would have otherwise remained private had the income trust form not existed.

Chapter 3 investigated the role and short-term consequences of market timing on the choice of organizational form. I proposed that the choice of organizational form is a trade-off between fit with the asset base of a firm and benefits of market timing accrued through lower short-term costs of going public despite a lack of fit. The study finds that both fit and market timing influence the choice of organizational form. Market-driven choices lead to lower costs of going public despite the lack of fit between a firm's asset base and the highly valued organizational form. Firms choosing the income trust form are generally larger and older and they are subject to a low extent of valuation uncertainty at the offering. This study extends previous evidence that firms are aware of the level of valuations for their industry peers when going public (Pagano, Panetta and Zingales, 1998) and time the market when issuing shares (Baker and Wurgler, 2000; Lowry, 2003) by showing that they time the market also when choosing an organizational form.

Chapter 4 investigates whether investment is driven by a firm's payout policy or by its investment opportunity set. This is an important question because a firm's payout policy may not always match its investment opportunity set, such as when high payouts are chosen by high growth firms. I find that while firms going public as income trusts have lower capital expenditures than firms that go public as corporations, they raise capital through SEOs and grow through acquisitions. Thus, investment and growth of high growth firms that choose high payouts due to market factors are still driven by the characteristics of their asset base. These results contribute to the free cash flow theory (Jensen, 1986; 1989), which makes predictions regarding the effect of high payouts on investment and performance under the assumption that the payout policy is chosen due to fit with the investment opportunity set, by shedding light on the comparatively less explored case when high payouts are adopted due to market factors and do not fit a firm's investment opportunity set.

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